RAILWAY AGE

The Railway Wage Question

The question of another reduction of railway wages must be squarely faced. The agreement for a 10 per cent reduction for one year made by representatives of the railways and the employees will expire on February 1, 1933, and railway officers are preparing to seek a larger reduction to be put into effect on or following that date. The Railway Labor Executives Association on August 24 announced that it proposed, before the election in November, to put on record every aspirant for public office either for or against "a labor prosperity program" which demands a cessation of wage reductions. The Railway Labor Executives Association asserted that, although the agreement made with railway managements provided for "an earnest and sympathetic effort to maintain and increase railroad employment", an additional 100,000 men have lost their jobs in the last six months.

Hope for More Employment Unrealized

It is true it was hoped and expected, when the wage agreement was made, that it would result in an increase of railway employment and that there has been a reduction. But what has occurred in business since then also has been the opposite of what was hoped for. In January, when the agreement was negotiated, railway car loadings were 21 per cent less than in 1931, and 39 per cent less than in 1929, and it was expected they would increase. In July, however, they were 34 per cent less than in 1931 and 54 per cent less than in 1929. These figures reflect the fact that general business and railway earnings grew steadily worse after the wage agreement was made, and railway earnings are still as bad as ever, although there are indications that general business conditions are beginning to improve.

The gross earnings of the railways in the first six months of 1932 were 27 per cent less than in the first six months of 1931 and 48 per cent less than in the first six months of 1929. In June, 1932, they were 33½ per cent less than in June, 1931 and 54 per cent less than in June, 1929. In consequence, in spite of the most drastic reductions of operating expenses ever made, including the reduction of wages, the net operating income earned in the first half of this year was only enough to pay one-third of fixed charges; and many railroads would have been placed in receivership if they had not received large loans from the government. It is, therefore, not surprising that the number of railway employees declined, although the managements would have been glad to have increased it.

A Three Years' Wage Policy

The developments that have occurred during the almost three years of depression challenge frank and dispassionate consideration by both employers and employees of the economic soundness of the wage policy that has been followed, and of the wage policy that should be followed in future. There is a very sharp and probably significant contrast between what occurred in the railroad and other industries in the depression of 1921-1922, and during the present depression. A general reduction of 12 per cent in railway wages was made on July 1, 1921, and another general reduction in the summer of 1922. A similar wage policy was followed in other industries. This resulted in some serious labor troubles, including, in 1922, the general strike in the union coal mines and the nationwide strike of railway shop employees. In spite of these labor troubles, general business and railway traffic began to revive in 1922, and the railways handled in 1923 a record-breaking freight business and employed 235,000 more persons than in 1922.

On the suggestion of President Hoover the railways and other industries in the fall of 1929, following the collapse of the stock market, adopted the policy of maintaining wages, and the railways adhered to it until February 1, 1932, with the result that throughout 1930 and 1931 they paid the highest average hourly wages in history. Many other large industries also maintained wages. The presumption upon which the policy of maintaining wages was based was that if the purchasing power of labor was maintained it would help maintain business, but meantime, general business and railway traffic, earnings and employment constantly declined. The average number of railway

employees was 1,687,000 in 1929; 1,511,000 in 1930; 1,278,000 in 1931; 1,109,000 in January, 1932, and only 1,047,500 in July, 1932.

Did Maintaining Wages Help Business?

It seems plain that the maintenance of wages, after business already actually had seriously declined, reduced employment more than it would have been reduced if wages had been reduced; that this intensification of unemployment so frightened men who remained employed that they reduced their purchases more than they otherwise would have reduced them; and that the final result was to help reduce business and employment all along the line. There was another important factor in the situation which should not be disregarded. Throughout the period when wages were being maintained, commodity prices and dividends on stocks were constantly declining and the incomes and purchasing power of millions of people were being thereby reduced. In consequence there was a constantly increasing disparity between the purchasing power of those whose incomes were declining and those whose wages were being maintained, with the result that the former became less and less able to purchase the products of the latter, and that business became constantly more and more unbalanced, and in consequence, declined more and more in total volume.

It may be replied that general business has continued to decline since general wage reductions were made as well as before. Business grew steadily worse during 1932 until recently because of credit conditions created by previous developments and the antics of Congress. Experience in earlier depressions strongly support the view that the present depression would have been shortened by making wage reductions and other readjustments as promptly as they were made in earlier depressions.

Wages and Cost of Living

We must now face and deal with conditions as they have been made by past policies and developments if we are to restore prosperity. One of the most important and undeniable of existing conditions is the virtual bankruptcy of the railroad industry. Government loans may temporarily save the railroads from receiverships and help them to increase employment and purchases for maintenance work. There cannot, however, be any lasting increase of railway employment and purchases without an increase in railway net earnings. An increase in their traffic and gross earnings seems to be approaching, but it is a matter of conjecture as to how large it will be or when it will arrive, and it cannot safely be waited for. An advance in rates cannot be considered. The only available certain means of improving the condition of the railroad industry is a substantial reduction of wages, and a reduction larger than that now in effect would not be unjust. According to the United States Bureau of Labor Statistics the average wholesale price of commodities was 34 per cent less in July, 1932, than in July, 1929, and the average cost of living was 20.3 per cent less in June, 1932, than in June, 1929. The average wage per hour of railway employees in 1931 was almost 69 cents, as compared with 66.6 cents in 1929, and, allowing for the 10 per cent reduction made on February 1, it is now probably 62 cents, or about the same as in 1923 and 1924. As measured by the cost of living, the purchasing power of an average hour's railway wage is now higher than in 1929, and if it were reduced another 10 per cent, its purchasing power would still be as great as in 1929. Could any class of workers reasonably complain about a reduction which would leave the purchasing power of its average hourly wage as great as in 1929? The average weekly and monthly earnings of employees have been reduced more than their average hourly wage because the number of hours they work has been reduced. Their average earnings in the first five months of the last four years were as follows: 1929, $726.39; 1930, $721.26; 1931, $700.43; 1932, $623.94. Average earnings in the first five months of 1932, owing to reductions of both hours and wages, were about 14 per cent less than in 1929. Certainly, however, workers who have had a reduction of only 14 per cent in their average earnings since 1929 have fared relatively very well as compared with most other persons and would still be faring well as compared with most other persons if their average hourly wage was made 20 per cent less than in 1930 and 1931.

Conditions That Must Be Faced

The existing conditions are extremely regrettable, but these conditions compel the managements of the railways to seek a reduction of wages greater than the 10 per cent that has been in effect since February 1. If they cannot get it by such negotiations with the labor leaders as occurred last January, they must seek it through the slow processes of the Railway Labor Act, and they must take the preliminary steps in the near future. Probably most railway men realize the desperate condition of the industry by which they are employed, and it is to be hoped that the railway labor executives, in declaring that "wage cutting must stop", did not express a view for which they can get the strong support of railway employees generally. It is to be hoped that railway employees generally will realize not only that a further reduction of wages under existing conditions is imperative but that when prosperity returns advances probably will again be made as they were following the reductions made in 1921 and 1922.

Whatever may be the attitude of labor leaders and employees, however, the duty of railway managements to employees, security owners and the public is to spare no effort to convert the railroads as rapidly as possible from a bankrupt into a solvent industry. Unless there is an unexpectedly large and rapid increase

of traffic and earnings, it will be a major, although very disagreeable, part of this duty to seek a larger reduction of wages than that which has been in effect since February 1.

Railroads and Private Motorists

Thomas P. Henry, president of the American Automobile Association, in a recent statement which was widely quoted in the press expressed grave concern lest commercial motor transport be strangled "through the use of the taxing weapon which the railroads are encouraging throughout the country today". Aside from the fact that this statement is inaccurate and that the railroads are asking for nothing more than the placing of their competitors on a plane of equality with them, it still seems more than a little strange that President Henry should be so worried about the welfare of commercial motor transport.

Rather, it might be expected, his main interest would be in the welfare of private motorists for whom, he says, his association speaks primarily. We are glad to read this avowal because it is the only evidence which has so far come to hand that Mr. Henry made this differentiation between private and commercial highway transport. Has he, for instance, been explaining to his membership the fact that gasoline taxes fall much more heavily on the private motorist, in proportion to his use of the highways, than they do on the heavy bus or truck? This is certainly a consideration of the greatest importance in any attempt to gage the fairness of present taxation of light, as compared with heavy vehicles. Railroad employees, in making this fact generally known, are doing a job which one might expect an association "which primarily speaks for the passenger car owners" would itself undertake.

Mr. Henry admits the belief "that commercial motor vehicles should pay a share of the road bill commensurate with their use of the road and the differential, if any, between the cost of arteries adequate for passenger car traffic and arteries necessary for heavy commercial traffic." "This, however," he adds, "is a matter for technical study. The commercial vehicle operators claim they are now paying their share."

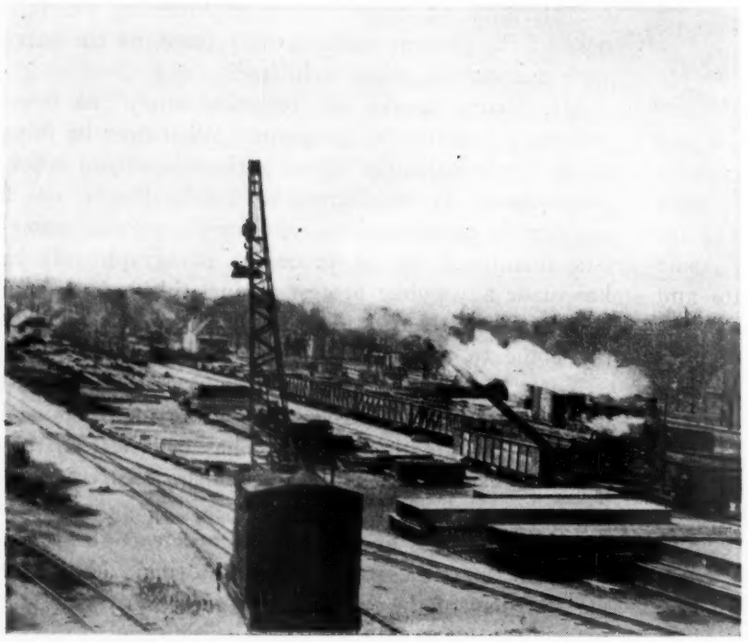
Well, the commercial motor vehicle operators at any rate, have some one defending their interests. They say they are paying their share. Who is there to question their claims, if they should be questioned, if Mr. Henry does not do it? We have questioned them in the columns of this publication and many motorists themselves have questioned them. We should think that if there were any question about the assertions of commercial operators, the first one to raise it would be the president of the American Automobile Association. We have already mentioned the uneven incidence of the gasoline tax. There is the further consideration that the general public use of a public facility is an entirely different thing from the commercial use of a public facility. We admit all citizens freely to the public parks, but those who wish to transact a restaurant business in these parks are expected to pay for the privilege. Is this not a consideration of importance in determining the fairness of the present taxation of private, as compared with commercial, motor vehicles?

Mr. Henry speaks of "technical study" as being necessary to settle this question. What does he think of the "technical study" given to the subject and widely disseminated by the Bureau of Public Roads, which ignores the considerations favoring the private motorists, mentioned in the preceding paragraph? If he has made any public protest against this lack of consideration of the private motorists' interests, it has not come to our notice.

No, it has been left to railroad interests to disclose the inequity of the burden on private motorists and draw public attention to it. It has been left to railroad interests to work for legislation to secure restrictions on oversized vehicles and unsafe operating practices which jeopardize the lives and detract so greatly from the amenities of private motoring. Meantime the president of the American Automobile Association rushes into print with an entirely gratuitous criticism of men allied with the railroad industry for endeavoring to secure by legislation the very ends which, one would expect, would be championed by the president of an association which "primarily speaks for the private car owners".

We know a few private motorists ourselves and we do not believe that Mr. Henry's views are typical. F. C. Horner, of General Motors, as widely-acquainted and well-informed probably as any man in the automotive industry, recently warned a meeting of trucking interests that "the railroads have the automobiling public with them". Our observation coincides with that of Mr. Horner. A prosperous automotive industry depends primarily upon a revival in private automobile buying. This cannot reach satisfactory levels in the absence of general prosperity. And prosperity cannot become general while railroads are not earning enough to pay taxes and interest on their bonds. Reasonable regulation and adequate taxation of commercial motor vehicles would relieve land owners and private motorists of disproportionate taxation. It would make motoring safer and more pleasant. It should restore to the railroads some of the traffic now being handled by subsidized competitors. The future of private motoring thus would in every way be fostered by the success of the railroads and their allies in securing the legislation they seek. That the president of the American Automobile Association should seek to hinder, rather than actively to aid, this effort is simply not understandable.

Supply Work Well Organized On Pere Marquette



Roadway Supplies at Saginaw, Mich.

Modern facilities and economical methods make stores factor in road's improved condition

THE Pere Marquette has a well-equipped stores department which has been adjusted to more efficient operation by extensive rearrangements recently made in both the stocks and methods. On May 1, the stock balance of the stores was down to $644,615, an investment of only $322 per mile of road, excluding coal, rails, ties and scrap iron, but including all materials at roundhouses and car-repair yards, together with $94,695 of supplies for steam boats and ferries. Over 50 per cent of this stock is retained at one point and over 93 per cent is retained at four points. The other 11 points, comprising roundhouses and repair yards, are all operated on a 30-day supply.

Approximately 90 per cent of the supplies handled by the stores is ordered on a form which can also be used by the purchasing department without re-writing. Instead of writing out orders for materials required in the shops and car-repair yards at Grand Rapids, the shop foremen and mechanics use telephones, and requisitions prepared to cover the material issued are sorted by machines. These, among other arrangements, dispense with red tape and lost motion in the road's supply work.

Store Stocks Centralized

Four distributing stores are the storehouse at Grand Rapids, Mich., where the main shop and car-repair yards are located; the central store for track, bridge and building materials at Saginaw, Mich.; a storehouse at St. Thomas, Ont., for the lines of the Pere Marquette in Canada; and a storehouse at Ludington, Mich., for supplies used in operating and repairing several steam car ferries plying on the Great Lakes. The stock balances at these points on May 1 were as follows:

Grand Rapids store	$322,475
Saginaw store	172,284
St. Thomas store	55,201
Ludington marine store	94,695

Included in the stock balance for the Grand Rapids is $44,000 of material located at outlying roundhouses and car-repair yards. The stocks at the latter points are ordered by the car or locomotive foreman in charge and are maintained jointly by the mechanical and stores departments. Stock books are in use at all these points and materials are ordered on a consumption basis.

The largest and most important of these repair points are equipped with 1½-ton electrically-operated portable jib cranes with 20-ft. booms for loading and unloading mounted wheels and other heavy materials, and for loading scrap. These cranes are also used for delivering wheels, couplers and other heavy items on the repair tracks to the car requiring repairs.

Chutes and Cranes for Handling

Materials at the general storehouse are stored in a 3-story fireproof brick building 187 ft. long and 40 ft. wide surrounded by concrete platforms and equipped with a 3-ton electric elevator. This building is also equipped throughout with metal cases and racks. The heavier materials, such as brass castings, journal bearings, bolts, nuts and rivets, hardware and pipe fittings are stored on the first floor. Items such as air brake, injector and lubricator parts, mechanical appliances and parts for locomotives, electrical materials, track tools and miscellaneous supplies are stored on the second floor, while telephone and telegraph materials, interlocker materials, parts for hand, push and motor cars, and the stock of stationery are stored on the third floor.

All light car and locomotive castings and forgings are stored adjacent to the storehouse in a frame building 195 ft. long and 33 ft. wide, where the racks and bins are wood. This building is also surrounded by concrete platforms.

Heavier items of materials such as wheel centers, cylinders, tires, axles, heavy rough castings, truck sides, bolsters, pressed steel car parts, wheels, etc., are all stored on a concrete platform 53 ft. wide by 910 ft.

M.P.&E. AND MARINE DEPT. MATERIAL REQUISITION AND GENERAL MATERIAL DISTRIBUTION CARD — STORE — PERE MARQUETTE RAILWAY CO. — MADE IN U.S.A.

Round House SHOP
5-27 1927

YEAR	MONTH	DAY	M&S ACCOUNT	POINT	A.F.E. NO. / STORE BILL NO.	LINE	TOL-LUD	ACCT.	CLASS	SUB DIV'N	SUB ACCT.	ENGINE CAR STEAMER WORK EQUIP. NUMBER	SHOP ORDER NUMBER	DEBIT ARA CLASS	DEBIT AMOUNT	CREDIT ARA CLASS	CREDIT AMOUNT

M&S ACCT. | SHOP ORDER NO. | RUNN'G REPAIRS | LOCO'S | PASS. CARS ✓ | POWR. PLNT. MACHINERY | OTHER ACCOUNTS DESCRIBE BELOW
A.F.E. NO. | FRT. CARS | *SHOP MACHINERY | SHOP EXPENSE

LINE	CLASS	AMOUNT	PRICE	UNIT	WEIGHT	QUANTITY	KIND	DEBIT DESCRIPTION
TOL-LUD					210#	1	Cyl	L-4060 Grate
ACCT.								
CLASS SERVICE			TOTAL DEBIT					
SUB DIV'N	CLASS	AMOUNT	PRICE	UNIT	WEIGHT	QUANTITY	KIND	CREDIT DESCRIPTION
SUB ACCT.					147	1		Bennett Cast Scrap
ENG. COACH STM'R W.E. CHECK WHICH								
INSERT UNIT NO.			TOTAL CREDIT					STOREMAN W.C. Sauer FOREMAN C. L. Crosby

I.B.M. 516522 504 LICENSED FOR USE UNDER PATENT 1,772,482 K.W. 6900 (3-25)

Full-Size Sample of Shop Requisition Which is Filled Out by Telephone Operator, and Punched and Sorted by Accounting Machine

long, served by a 15-ton traveling electric crane. The crane runs parallel to the repair shops so that it can be used not only for unloading and loading cars of heavy material but also for handling heavy materials required in the shops. A storage rack for bar iron and steel, 21 ft. wide and 60 ft. long, is located alongside of the crane runway and, as all iron in carload lots is shipped in open-top equipment, the cars are unloaded by the crane. Bunkers for blacksmith coal and coke are located where the coal can conveniently be unloaded by this crane.

Oil, Brick and Lumber Storage

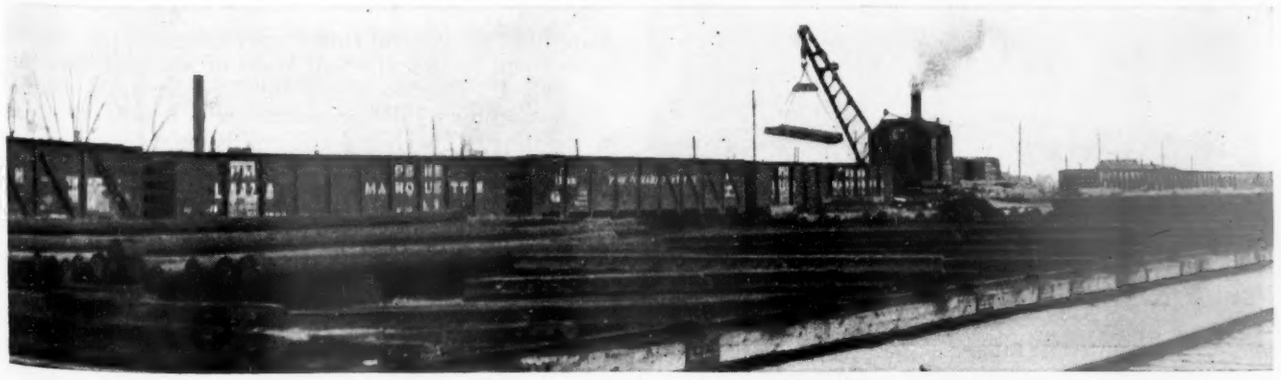
A one-story brick oil-house is close to the roundhouse and dispatching tracks. This building is 42 ft. wide by 74 ft. long and has a concrete platform, car-floor height, with ramps at both ends. It is equipped with self-measuring pumps and tanks and with facilities for renovating journal box packing. Arch brick is stored in a metal building 28 ft. wide and 75 ft. long, this building also being located adjacent to the roundhouse where the material is used. The brick is stored in racks and arranged according to pattern number for easy stock taking. Framed lumber, such as car lining, car siding, decking and surfaced car and building lumbers, is stored under cover in a frame building 217 ft. long and 42 ft. wide, situated near the planing mill, car-repair tracks and sheds.

Only the scrap accumulated at the local car and locomotive shops is handled at Grand Rapids. Scrap from other shop points and from the maintenance of way and other departments is shipped direct to Saginaw for handling. All scrap accumulated in the shops at Grand Rapids is brought to the scrap dock daily on flat-bottom or dump trucks by shop delivery forces where it is immediately sorted to classification and put in bins for loading and disposal. When sold, the scrap is loaded by a steam-driven self-propelling locomotive crane equipped with 45-in. magnet. This equipment is also used for unloading engine sand by substituting a clam bucket for the magnet. Engine sand storage at Grand Rapids is located adjacent to the coal dock and consists of a concrete building 15 ft. wide, 160 ft. long and 13 ft. high. The building is equipped with removable top and permits easy unloading of all open-top cars in which the sand is shipped.

To facilitate and speed the handling of materials from second to first floor of the main storehouse for delivery to the shops, a chute has been installed between these floors. The chute is close to the telephone exchange board where all materials are segregated for shop delivery.

Method of Ordering Material

Stock at the general store is divided into 24 sections maintained by seven section storekeepers who are responsible for the ordering, storing and disbursing of all materials for stock. Monthly inventories are taken on designated days in each section with the quantities due and purchase requisition reference on which due.

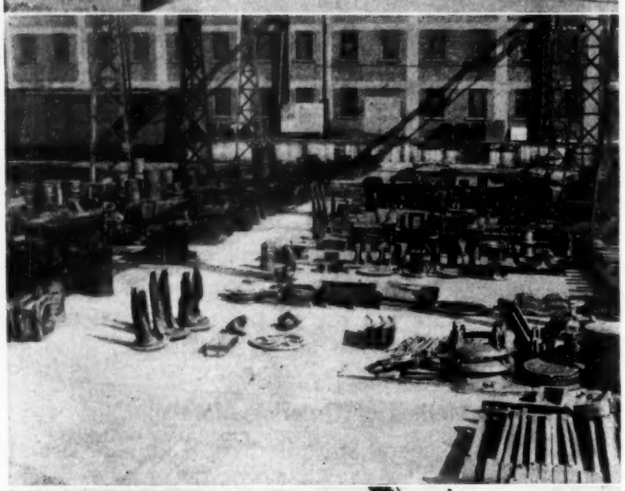


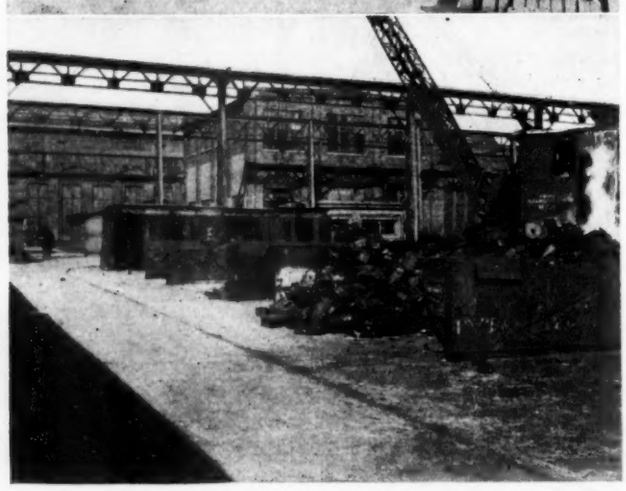
Another View of the Central Yard for Maintenance-of-Way and Structures Material

The amount of material to be ordered is also shown and the book is passed to a typist for preparing orders.

A combination requisition and purchase-order form is used by the general storekeeper for ordering material through the purchasing agent. Eight copies are made of this form and the first five copies sent to the purchasing agent after proper approvals have been obtained.

Copy No. 1 goes to the firm with whom the order is placed. This is a white form and shows prices, terms, how to be shipped, etc. Copy No. 2, a pink form, is the storekeeper's requisition and is filed in the purchasing agent's office as his authority for making order.





Views at the General Storehouse, Grand Rapids, Mich.

Copy No. 3 is used by the invoice clerk in the purchasing agent's office to check the vendor's invoice as to prices and terms. Copy No. 4 is retained in the purchasing agent's office for his numerical file. Copy No. 5 is returned to the general storekeeper for his records. Copy No. 6 is retained in the office of the general storekeeper as a numerical file and is matched with the No. 5 copy when received from the purchasing agent. Copy No. 7 is forwarded to the section storekeeper at the time the requisition is made and is turned in to the general storekeeper's office together with his tally when the goods are received. Copy No. 8 serves as the general storekeeper's invoice record. When No. 5 copy is received from the purchasing agent, the information is transferred to the No. 8 copy, and when invoices are received from the vendor, the date and amount of the invoice, the quantity of material and date received are recorded on the No. 8 copy and, when all the material is received, this copy is removed from a looseleaf binder and filed with other copies of orders and papers pertaining to the individual order. Approximately 1,000 of these orders are made each month and all material with exception of that manufactured in own shops is obtained by the use of this form.

Copies of all agreements made with supply firms are filed in the office of the general storekeeper so that when requisitions are written in the general storekeeper's office, the orders can be filled in to show the firm furnishing the material, the agreement number and the date for shipment. Considerable typing and stationery in the purchasing agent's office is saved by this practice over the old practice of preparing the requisition in the general storekeeper's office which must be rewritten in the purchasing agent's office.

Trace with Post-Card

When materials ordered from supply houses are not received promptly, the general storekeeper's office communicates directly with the supply houses. The section storekeepers keep a close check of the materials under their jurisdiction and, when it is found that certain items of material are getting low and will be required on a certain date, information is passed to a tracer clerk in the general storekeeper's office showing the order reference for the items desired. Except in cases of extreme emergency, all tracing is done by means of a printed postal card, which is cheaper and has been shown to obtain the same results from the vendor as a letter. Material urgently required is traced by telegram.

How Outlying Stores Get Material

All materials for use at other than the general store are ordered on a departmental requisition which also serves the purpose of a departmental invoice. This order is printed in quintuplicate. Copy No. 1 is prepared for the general storekeeper's file and provides the permanent record after all items of material have been furnished. The No. 2 and No. 3 copies are forwarded to the auditor of disbursements, who handles all stores accounting. The No. 4 copy or shipping notice is forwarded by the general storekeeper to the maker of the requisition on the same day the material is shipped. The No. 5 copy is retained by the maker for his file and record.

When properly-approved requisitions are received in the general storekeeper's office, they are registered in a journal and given a serial number which is stamped on all four copies. The requisition is then turned over to the proper section storekeeper for shipment in ac-

cordance with the way and the time the delivery is specified. The items shipped are circled and all information as to the manner and time of shipment and other information necessary to proper accounting are shown on all copies. The requisition is then returned to the general storekeeper's office.

If all the items of material described in a requisition cannot be furnished at the time of shipment, the words "back order" are stamped opposite the unfilled items on all copies and another set of forms prepared which are given the same register and requisition number and passed to the section storekeeper to fill when a supply of material is received.

If the material ordered by the maker of the requisition is not a stock item and not carried at the store, a purchase requisition is made on the purchasing agent calling for shipment of material by the manufacturers direct to the party ordering at the destination specified. Approximately 1 per cent of the requisitions received are so handled, while 99 per cent of the material is furnished out of store stock.

The cost of handling materials is arrived at by dividing all the issues of store stock into total charges to stores expense each month. The cost runs between $35 and $45 per $1,000 of material issued by the stores. In cases where materials are shipped direct to other than the store department and the handling of the material is not performed by the store forces, material store expense is not assessed.

To reduce the number of less-than-carload shipments and likewise to reduce the number of cars loaded below capacity, a date is designated when cars will be loaded for each outside store or repair point. At that time, the general foreman calls on all section storekeepers to segregate all unfilled orders for loading. These materials are then loaded on trailers and taken to the car by tractors.

Less-than-carload shipments are handled in the same manner except that the materials are loaded into cars running between the stores and freight house. In cases of extreme emergency, lighter items of material are shipped by baggage. Carloads of materials of one or more items of a similar nature are spotted as nearly as possible to the point of storage for unloading, while less-than-carload lots from the freight house are spotted at the unloading platform at the store and loaded on trailers and taken to the proper section storekeeper for check and tally.

Shop Order by Telephone

Both the using and delivery departments at Grand Rapids decided that the cheapest and most efficient method of ordering material for delivery to the shops was by telephone, using a telephone switchboard and telephones located at different points in the shops which were installed by the local telephone company on a rental basis which includes proper maintenance. The system includes a switchboard located in the stores building and 26 telephones: 1 phone in the oil house, 1 in the roundhouse foreman's office, 4 in the roundhouse, 1 in the power house, 1 in the tin shop, 1 in the rod shop, 1 in the motion gang shop, 1 in the erecting shop, 1 in the tank shop, 1 in the boiler shop, 1 in the machine shop, 1 in the paint and pattern shop, 1 in the electrical shop, 1 in the steel car shop, 1 in the wood mill, 1 in the wood car-repair shop, 1 in the light repair yards, 1 in the motor-car repair shop, 1 on the second floor of the storehouse, and 1 on the third floor of the storehouse.

When material is required, the foreman calls the switchboard operator in the store and describes the materials and at the same time advises the equipment on which the material is to be used or the account to be charged. The operator makes out a material charge card in duplicate and passes it to the store forces for filling. The materials are segregated as far as possible at one location in accordance with the station to which they are to be delivered and all items which can be furnished are circled on the order and weights or other information, except the prices, necessary for proper accounting shown thereon. In case the store is unable to furnish and no substitution can be made, the words

In the Storehouse at Grand Rapids—Note Switchboard which Dispenses with Order-Writing by Shop Forces

"no stock" are stamped on both the original and duplicate copies of the order.

Deliveries are made to the using departments every 30 minutes except in cases of emergency when an immediate delivery is made. At the time of delivery, the duplicate copy of the order is left with the material for the foremen's check. An average of 500 orders are received in a 24-hour day. The original of the order, when received in the office, is checked to see if items marked "no stock" have been reported and each day's collection of material cards are forwarded to the accounting department for proper distribution. A special card is used which can be punched and run through a tabulating machine in the office of the auditor, this machine picking out all cards chargeable to the different I. C. C. accounts as punched.

Material Handling Equipment

The delivery organization consists of: 1 foreman, 1 telephone operator—first trick, 1 telephone operator—second trick, 1 telephone operator—third trick, 3 tractor operators—first trick, 1 tractor operator—second trick,

Wood Wheels Are Used on Some of the Tractor Equipment

1 tractor operator—third trick, and 8 laborers. The equipment for the delivery work and other material handling consists of: 4 tractors; 37 heavy-duty platform-type trailers, 42 in. wide, 84 in. long and 21 in. high, complete with $\frac{3}{16}$-in. Diamond steel plate tops with Hyatt roller bearings and wood wheels; 6 No. 1 hand carts with 36-in. wheels, $\frac{7}{8}$-in. axles, a 40-in. by 23-in. box, 10 in. deep, with 1-in. tread wood wheels; 21 three-wheel self-tracking lumber trailers, equipped with stake loops; and 35 one-cu. yd. dump body trailers equipped with Hyatt roller bearings and Metzgar wood wheels. The roadways around the shops are generally paved with concrete.

In addition to delivering all materials to using departments ordered through telephone, the shop delivery forces transfer all materials being manufactured between shops and different machines in the shops. Dump trailers are spotted at different points in the shops, roundhouses and car department, into which are loaded rubbish, scrap and cinders. These are moved on the order of the foreman and replaced by empty trailers at the same time. Materials for repairs on shop orders are likewise transferred between store and shops by the means of shop delivery forces.

The moving of trailers is also regulated through telephone switchboard, requests for empties and movement of loaded trailers originating with the different foremen. A sample of the card used for such work shows that an order originated at Station 15 at 9:30 a.m. when the foreman called for an empty dump trailer. The card shows that the trailer was delivered at 9:45 a.m. at the station designated when it was loaded with rubbish. The same foreman called the operator on the exchange at 11:30 a.m. to have rubbish removed to the dump and the tractor operator removed the trailer at 11:45 a.m. The same procedure is followed in moving materials from different machines or shops which are being manufactured on shop orders.

Maintenance-of-Way Material

All maintenance-of-way material, except track tools, motor, hand and push cars and parts, interlocking and signal material, telegraph and telephone material, fuel and water service material, elevator and coal dock material, is handled at the Saginaw store, which serves as a general store for such material. Frogs, switches, etc., are shipped out only as required by the maintenance-of-way department on approved requisitions, line stocks having been discontinued and emergency stocks being carried only at important points.

Materials for rail relaying programs are shipped direct to the point required to save cost of handling and back haul, and the shipments released from the store only as required. Bridge and building timbers and piling are shipped as required by the maintenance-of-way department on approved requisitions and line stocks of this material have been discontinued. Creosoted switch ties are shipped from the treating plant to points required to save the cost of handling and back haul, and an emergency stock only is carried by the stores.

Handling Scrap

Practically all of the scrap is sold from the scrap yard located at Saginaw, Mich., except scrap metal and scrap accumulated from the Grand Rapids shops and in Canada, while the greater part of reclamation operations are carried on at Wyoming shops. The scrap is sorted to A.R.A. classification, which requires the unloading and sorting and reloading of the material received at the yards. It is unloaded by two magnet cranes and sorted into piles. The equipment also includes shears. The average cost of sorting mixed scrap is 89 cents per net ton, and rail scrap 44 cents per net ton, which includes the labor cost of unloading, sorting, cutting, loading, shear operation, electric power for shears, oxweld supplies, oxygen and acetylene, depreciation and insurance on cranes, coal, oil and supplies.

The stores are operated under the general direction of W. G. Black, assistant vice-president, and E. A. Carlson, general storekeeper.

Oil-Proof Extension Cords

IN certain types of service, extension cords for electric lights and portable tools are subjected to the continual attack of oil resulting in deterioration not only of the outer coverings, but eventually of the insulation. To meet this condition The Okonite Company, Passaic, N. J., has developed a full line of portable cords and cables having a special outer sheath which the manufacturer states is impervious to the destructive action of oil or grease, and is little affected by strong sunlight and ozone. This line of cords and cables is called "Oilproof Okocord."

Seven Spillways Were Constructed in Stephens Creek to Produce A Non-Eroding Grade

Erie Solves Severe Erosion Problem in Lateral Streams

Widens creek beds and flattens grades by means of timber spillways to protect roadway from deluge of silt and gravel brought down with storm water

HOW to protect its line against the erosion of lateral streams along the southern tier of counties in New York, especially between Corning and Hornell, a distance of about 40 miles, has been a long-standing problem on the Erie, but one which now seems to have been solved. For more than 30 years the Erie has been forced to give special attention to about 10 streams which cross its right-of-way in this territory, streams which, though tranquil ordinarily and frequently dry during periods in the summer, become raging torrents during spring freshets or after heavy or prolonged storms. Unfortunately, it was not only a matter of taking care of the deluge of water under the tracks when it came, but, of much greater concern, the disposal of tons of gravel, broken rock and debris carried by the water, which not only blocked the streams and bridge underpasses, but which, at times, was carried up over the railroad embankment, completely blocking traffic.

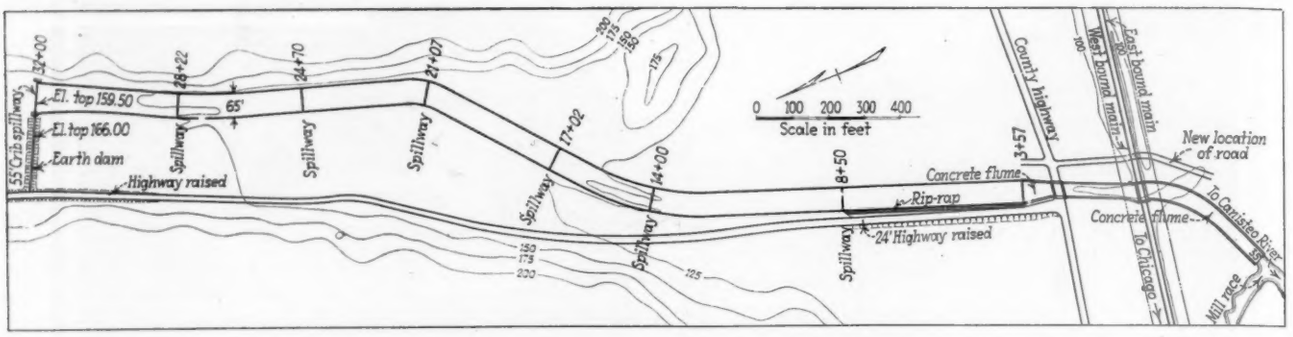
Permanent Relief Provided

For many years the difficulties encountered were fought with steam shovels or draglines in an effort to restore the stream beds after a heavy storm or series of storms, and it was not until three or four years ago that work was started on a large and comprehensive scale to afford permanent relief from the trouble experienced. In this work the principal aim has been to produce non-eroding flow in the streams, even at its highest stages. This has been done by the clearing and widening of the channels and by the construction of dams and spillways across the streams to cut down their steep natural slopes. Eight streams have been treated in this manner, as many as 19 dams having been constructed in a single stream in order to produce a non-eroding slope.

In the early work of this nature, the smaller streams were given first consideration, the work being done largely by the maintenance of way forces. Some of these smaller streams necessitated more dams than certain of the larger streams, but in most cases the dams were relatively low and short, and of relatively light timber construction. Work on two of the largest and most unruly streams, Stephens and Cunningham creeks, was done under the direction of the engineering department, and is more representative of what is now considered on the road as the best practice in meeting the difficult conditions presented. Therefore, while all of the work is of interest, even on some of the smallest streams, this article will be confined largely to a description of the measures adopted in connection with the two largest streams.

Conditions at Larger Streams

Stephens creek is located about a mile east of Canisteo, N. Y., while Cunningham creek is located about a mile west of the town, both streams flowing down the steep slopes of a valley, at right angles to the railroad, and emptying into the Canisteo river, which closely parallels the tracks on the south side. Both creeks presented the same problem. While ordinarily peaceful streams with little water, they became eroding torrents with heavy rainfalls, carry-



General Plan of Improvements Made in Stephens Creek

ing hundreds of yards of sand and gravel and, at times, loose rock as large as eight inches in diameter, from the steep upper reaches, to be deposited on the flatter slopes across and on both sides of the right-of-way. To keep the channels open, steam shovels and draglines were put to work one or more times a year, dredging out the debris. This material was thrown up to form high dykes along both sides of the waterways, dykes which helped to confine the water, but which sluffed off severely with every freshet, again filling the channel and choking the waterways beneath the railroad. Unfortunately, the bridge openings at Stephens and Cunningham creeks were both inadequate to meet flood conditions, particularly in height, which could not be remedied readily by either raising the tracks or lowering the beds of the streams. During heavy storms these openings became blocked frequently, in spite of the efforts of the section forces to keep them open, and the water, still carrying tons of sand and stone, would flood adjacent property and, not infrequently, surge over and down the tracks. This situation not only required vigilance on the part of the road during storms, but caused delay to trains, damage to the roadbed, and expense in removing the rock from the tracks, which has been known to pile up as high as two or three feet over the rails.

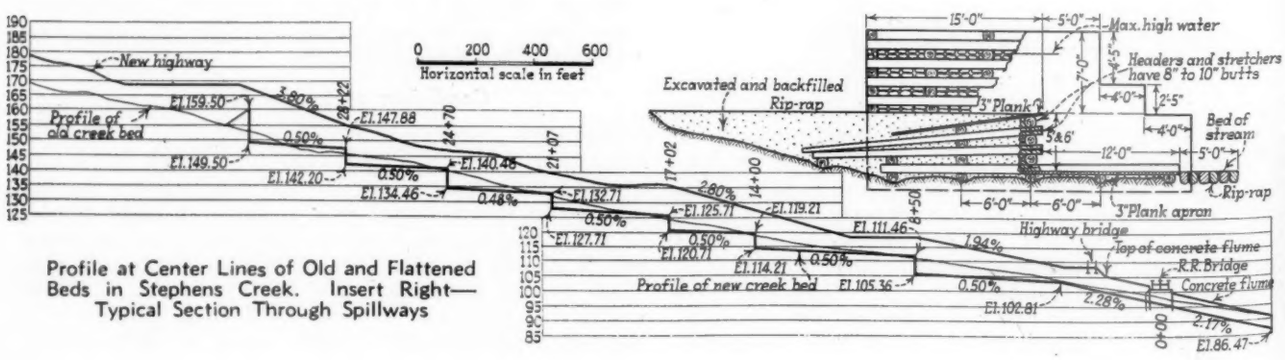
Flow Reduced to Eight Feet Per Second

Recognizing that the solution of the problem in these two creeks lay in widening the channels and in producing non-eroding slopes, a most exhaustive study was made of each stream and of corrective measures. This was necessary primarily because of the lack of accurate flow data on the streams and the lack of precedent in solving the problems presented. Stephens creek, although only about 5 miles long, had a drainage area of approximately 7¼ sq. mi. High water marks were not available because of the broken meandering course of the stream at its lower end during high water, and, it was necessary, therefore, to determine the runoff from rainfall and drainage area data. With the average annual rainfall in this vicinity known to be approximately 33.5 in. and the maximum hourly fall about 2½ in., the flow of the creek was computed to be between 2,500 and 2,800 cu. ft. per sec. Study of the creek bottom and the material which had been moved by storms led to the conclusion that a maximum mean velocity of 8 ft. per sec., which would produce a side and bottom velocity of only about 6 ft. per sec., would be non-eroding. Using this figure with the largest calculated volume of flow, 2,800 cu. ft. per sec., it was determined that the creek slope, which varied from about 1 to 5 per cent, would have to be flattened to 0.5 per cent, and the channel widened to 65 ft. throughout a distance of about 3,200 ft. up stream from the railroad, within which territory the greatest movement of material occurred.

Seven Spillways Put in Creek

In effecting this, an earth dam and a timber spillway were constructed at Sta. 32+00, and six other spillways were provided at points further downstream. At Sta. 32+00, the dam and spillway lie practically in a straight line, the dam being 220 ft. long and from 5 ft. to 10 ft. high, and the spillway 85 ft. long and approximately 10 ft. high. These structures not only direct the water to the proper channel during flood stage and prevent the flooding of a large section of the valley west of the channel, but also produce a large area of backwater behind them which, it is felt, will check any eroded material which may be brought down from above. In connection with the construction of the dam, it was necessary to raise an oil-bound macadam highway a maximum of about five feet throughout a distance of 750 ft. This was done with material excavated from the stream bed.

From the foot of the first spillway, downstream to



Profile at Center Lines of Old and Flattened Beds in Stephens Creek. Insert Right—Typical Section Through Spillways

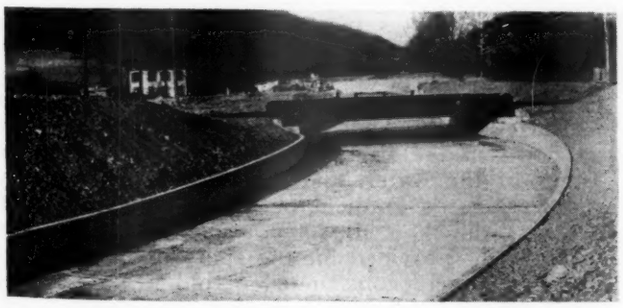
Sta. 3+57, the old channel was widened to 65 ft., the excavated material being thrown up on each side to form banks, and six other timber spillways were constructed, from five to six feet high and spaced from 300 ft. to 550 ft. apart, depending upon the natural fall in the stream. These spillways did not increase the height of the water in the stream appreciably at any point, as they were set down in the bed of the stream and the new slope of 0.5 per cent was formed by excavating the old channel in front of them. Thus the new channel from Sta. 3+57 to Sta. 32+00 is a series of seven steps, with a relatively flat slope between the spillways. The flood crest over the spillways is estimated at about 4½ ft., but in each case this is well below the top of the new high and wide embankment on each side of the stream. With the velocity of the water down to 8 ft. per sec., even at flood stage, it is not expected that the banks will wash or otherwise be disturbed, but, as an added precaution, anchor cribs, with a rock and timber face, were provided at the ends of the spillways and were keyed firmly into the embankments.

Throughout this section of the stream, it was necessary to relocate and raise about 850 ft. of the highway paralleling it on the west side. The new roadway runs directly along on top of the embankment forming the west bank, at an elevation well above any anticipated high water. As a special precaution throughout this section, the toe of the embankment, to a height of six feet, was paved with rip-rap.

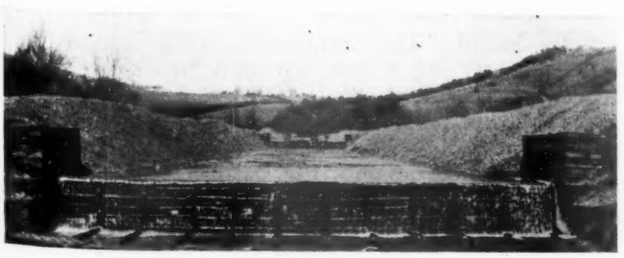
Bridge Openings Too Small

Below Sta. 3+57 the stream passed under an old through truss highway bridge at about Sta. 2+55, and then under the two-track through plate girder bridge of the railroad at Sta. 0+00. Below this point the old channel swung abruptly to the east over low lying land and continued for about 2,700 ft. to a junction with the Canisteo river.

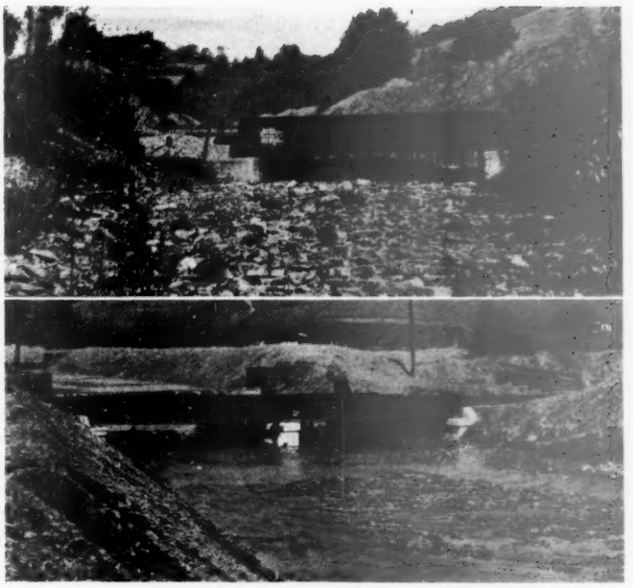
From Sta. 3+57 down, the old creek bed was on a slope of only about 0.7 per cent, a slope which retarded greatly the rapid flow of water from above and provided a natural settling basin for the silt and stone that was brought down during high water. Hundreds of tons of this material were deposited on the right-of-way each year and had to be cleared away. The extent of the work caused is seen in the fact that it had cost approximately $6,000 a year to cope with the situation at this point, and promised to cost in excess of this amount in later years when an increased accumulation of debris would make it necessary to haul some of it away.



Looking Upstream in Stephens Creek Over the Flume Which Accelerates the Flow Across the Right-of-Way



One of the Three Spillways in Cunningham Creek



Cunningham Creek in the Vicinity of the Right-of-Way, Before and After Improvements

Another primary source of trouble in handling the water in the immediate vicinity of the right-of-way, was the fact that the openings under both the highway and railroad bridges were too narrow and shallow, the highway bridge providing a clear opening only 39 ft. wide and the railroad bridge an opening of only 48 ft. An attempt was made to maintain the height of openings at four feet, but this was practically impossible without constant work and, therefore, the openings were seldom more than two feet high.

Concrete Flume Provided at Lower End

In making improvements in this vicinity, it was recognized that it was necessary either to increase the size of the openings under the bridges by providing new structures of greater span, or to accelerate the flow of water across this territory by means of a concrete flume. Study of the relative advantages and costs of the two solutions led to the adoption of the flume.

The flume, which has a paved bottom, is of concrete construction. From an inside width of 65 ft. at Sta. 3+57, the normal width of the new channel above, the flume narrows down to a width of about 38 ft. where it passes under the highway bridge, and then continues at this width to within about 100 ft. of the railroad bridge, where it is flared out to the maximum width possible under that structure. The slope provided in the bottom of the flume down to the lower side of the railroad bridge is uniformly 2.28 per cent, sufficient, it was calculated, to produce a mean velocity of flow of over 20 ft. per sec., more

than enough to carry any suspended matter brought down with the water.

Below the railroad bridge, it was either a matter of allowing the old long channel across the flats to the river to remain or to provide a new short-cut channel to a connection with an old mill race which emptied directly into the river. The latter plan was decided upon for two reasons: First, it was known that water would be discharged from the end of the new flume at the railroad bridge at a speed somewhere near 20 ft. per sec., which would cause serious erosion in the natural stream bed immediately below, and particularly on the south side of the channel where it curved abruptly to the east; and second, that any suspended material carried by the water would then be deposited below where the velocity fell sufficiently, with the certain result that it would cause trouble later.

In the plan adopted, the concrete flume provided down to and under the railway bridge was extended a distance of approximately 170 ft. on an easy curve to a connection with the mill race. This section of the flume was provided with a concrete floor on a slope of 2.17 per cent, and was tapered down in width from 48 ft. at the bridge to 35 ft. at its lower end.

Details of Spillway and Flume Design

The seven spillways provided across the creek were all constructed from timber cut in the vicinity and are of the same general design. Essentially they consist of a series of pole stretchers across the face, separated by pole headers of from 20 ft. to 25 ft. in length, which extend upstream and are buried in the creek bed. Details of their construction are shown in one of the accompanying illustrations. Specifications for the spillways called for the use of white or rock oak poles with 9-in. to 10-in. butts for all headers and face stretchers, and for the use of 3-in. by 6-in. or 8-in. white oak plank for the spillway deck and apron.

To give the spillways stability, all pole intersections were drifted together with ⅞-in. wrought iron drift pins, and the cribwork formed by the headers and auxiliary stretchers back of the face was backfilled with rock as built up. Furthermore, the stretchers in the bottom course were embedded firmly in the channel bed and all of the stretcher members were spiked to and made to extend at least 18 in. into the side anchor cribs.

The anchor cribs were more or less similar in construction to the spillways themselves, consisting of timber headers and stretchers, the headers extending well back into the side embankments. These structures were made to extend from the newly excavated floor of the channel at the base of the spillway, to well above maximum high water over the spillway, and of such length as to afford full protection to the section of embankment immediately each side of the spillway crest. In backfilling the anchor cribs, which was done as they were built up, large stones were placed in the face to prevent the possible washing out of the back-fill material.

The flume provided below Sta. 3+57 consists essentially of mass concrete side walls, varying in height from about 5 ft. to 6 ft. above a 6-in. floor, reinforced with welded fabric. To take care of expansion and contraction in the concrete, the flume was constructed in sections approximately 40 ft. in length, with expansion joints at each end in the side walls and also in the floor. Furthermore, expansion joints were provided between the floor and the side walls, the two parts of the structure being entirely independent. Under the center line of the new highway bridge constructed, with its span of 39½ ft., a vertical clearance of 5 ft. 6 in. was provided, and under the existing railroad bridge, with its span of 48 ft., the maximum height of the opening is approximately 4 ft. 5 in.

Similar Work at Cunningham Creek

At Cunningham creek, where the problem encountered was practically identical to that at Stephens creek, the same corrective measures were applied, but in this case three spillways were sufficient to flatten out the creek profile, and, the enlarging of the opening under the tracks by the erection of a new bridge precluded the necessity for the construction of a flume.

A study of the situation in this creek, which had a drainage area of about 5.2 sq. mi., showed that by far the greatest trouble with erosion occurred within a distance of 1,600 ft. upstream from the railroad. Within this territory the accumulation of rock and debris brought down from above had been thrown up into high banks along each side of the channel, which became undermined and sloughed off with every heavy flow, blocking the channel and the inadequate opening under the tracks.

Since it was expected that little more coarse material would be brought downstream from above Sta. 16 + 00, or 1,600 ft. above the railroad bridge, owing to the fact that the stream bed had eroded to bed rock at many places and to the further fact that extensive sections of bank revetments had been provided where wash had been the most severe, the work of the railroad extended only up to this point. Using a maximum discharge figure of 2,250 cu. ft. per sec., determined from actual measurements and checked by state discharge charts, and, for the same reasons as at Stephens creek, holding to a maximum mean velocity of 8 ft. per sec., calculations dictated that the new channel should be flattened to a 0.6 per cent slope and widened to 66 ft.

To secure the new slope necessitated the construction of three spillways, having a total height of 23 ft. These spillways, two of which are 8 ft. high, and one 7 ft. high, are of the same general type of construction as those in Stephens creek, modified only as was necessary because of their slightly greater height. As in Stephens creek also, the spillways were set down in the stream bed so as not to raise the height of the water, and the excavation necessary in lowering the gradient between spillways, and in widening the channel, was done by a dragline. The anchor cribs provided for the spillways in Cunningham creek were constructed of old bridge timbers and were provided with a tight face to prevent possible wash of the backfill.

The old single-span three-track through girder bridge carrying the railroad over the creek provided an opening only about 20 ft. in width and 20 in. in height. This unfavorable situation was remedied by erecting a new two-span girder bridge, with two clear openings of 35 ft. by 4 ft. 6 in., sufficient to take care of maximum possible flow.

Below the lowest dam, beneath the bridge and for some distance beyond, the natural bottom gradient of 1 per cent was lowered to 0.75 per cent and for the last 300 ft. of the stream, before its junction with Canisteo creek, the gradient was made 1.67 per cent.

From the bridge down, the stream was widened to 74 ft., wider than above the bridge, because of the slightly increased slope provided, and yet the desire to maintain the same low velocity of flow. Within the last 300 ft. of the stream the velocity of the water is increased and, therefore, in times of maximum flow will carry any suspended matter well out into the main stream.

All of the work described was carried out under the direction of G. S. Fanning, chief engineer of the Erie, assisted in planning and design by L. S. Rose, estimating engineer. The actual construction work in both creeks was done under contract, that in Stephens creek having been handled by the Peckham Construction Company, Buffalo, N. Y., and that in Cunningham creek by Senior & Palmer, Inc., New York. All work in the field was done under the direction of C. H. Splitstone, superintendent of construction of the Erie, represented by R. Fitzpatrick, resident engineer.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended August 20 showed a further increase of 6,211 cars as compared with the week before to a total of 518,642 cars. This was, however, a decrease of 229,958 cars as compared with the corresponding week of last year and of 421,916 cars as compared with 1930. Livestock, coal, forest products, and l.c.l. merchandise showed increases as compared with the week before while other commodity classifications showed reductions. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

Revenue Freight Car Loading
Week Ended Saturday, August 20, 1932

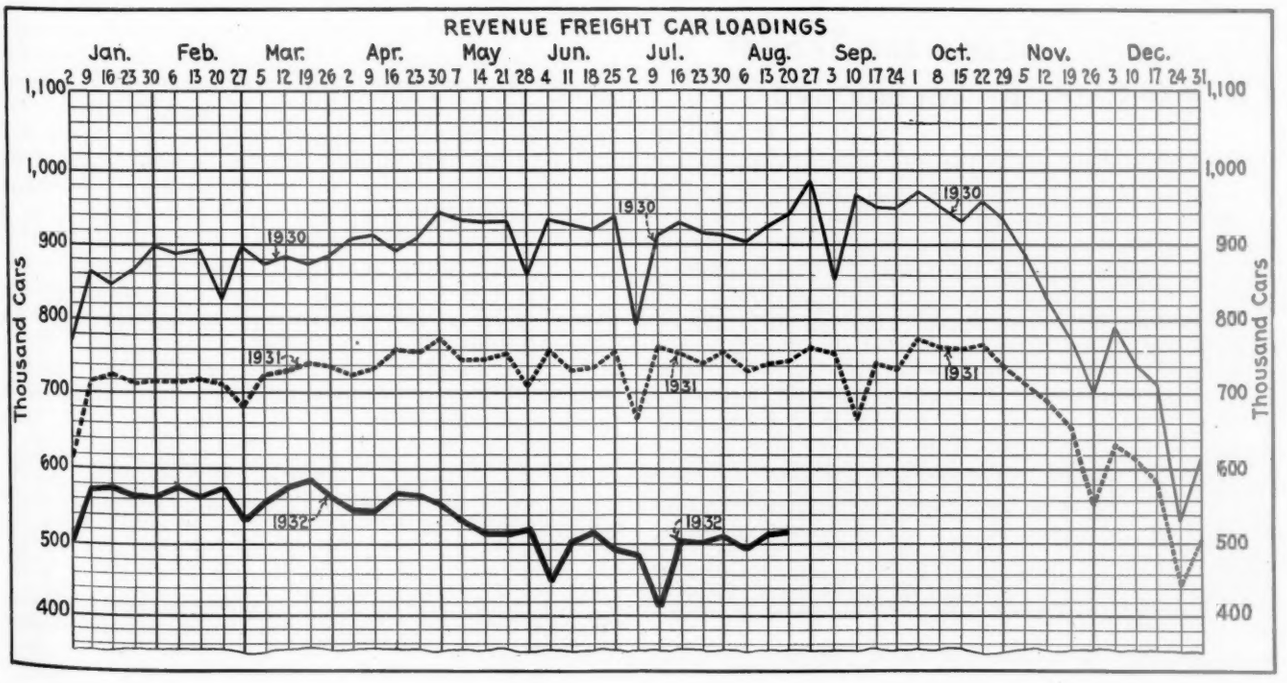
Districts	1932	1931	1930
Eastern	115,853	164,443	210,142
Allegheny	96,088	147,141	189,409
Pocahontas	36,263	47,358	54,335
Southern	74,730	103,136	122,632
Northwestern	68,635	109,042	150,666
Central Western	84,295	116,847	138,279
Southwestern	42,778	60,633	75,095
Total Western Districts	195,708	286,522	364,040
Total All Roads	518,642	748,600	940,558
Commodities			
Grain and Grain Products	38,144	44,741	57,975
Live Stock	18,437	24,192	21,842
Coal	84,790	117,752	152,908
Coke	2,615	4,358	7,858
Forest Products	15,678	27,235	41,376
Ore	7,225	35,724	55,087
Mdse. L.C.L.	169,946	214,010	236,423
Miscellaneous	181,807	280,588	367,089
August 20	518,642	748,600	940,558
August 13	512,431	743,626	922,823
August 6	496,033	734,730	904,157
July 30	510,687	761,818	919,781
July 23	501,130	742,481	919,301
Cumulative total, 33 weeks	17,572,111	24,272,173	29,667,750

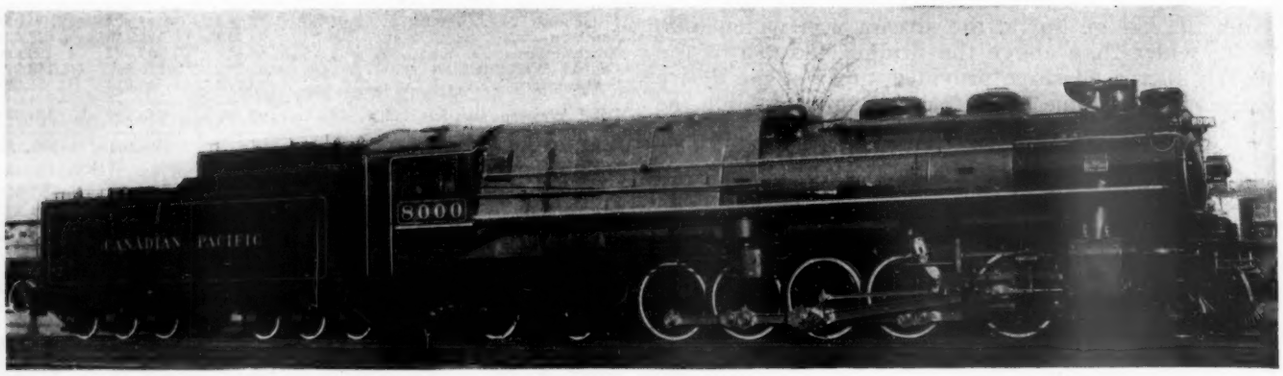
Car Loading in Canada

Car loadings in Canada for the week ended August 20 amounted to 39,770 cars which was an increase of 618 cars over the previous week's loadings and the index number rose from 65.64 to 65.83. Grain increased by 1,585 cars and coal by 515 cars.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada		
August 20, 1932	39,770	14,628
August 13, 1932	39,152	15,444
August 6, 1932	35,235	16,675
August 15, 1931	47,082	21,191
Cumulative Totals for Canada		
August 20, 1932	1,339,399	637,338
August 15, 1931	1,583,542	868,671
August 16, 1930	1,950,812	1,120,748

THE COMBINATION RAIL AND PULLMAN TICKET, which has been tried out on the New York, New Haven & Hartford since last April, was placed in service on August 25, by the New York Central between New York and Chicago; between New York, Buffalo, Cleveland and Detroit; between Cleveland and Chicago; and between Detroit and Chicago. This special ticket covers both rail transportation and Pullman accommodation.





Canadian Pacific Multi-Pressure Locomotive No. 8000

Development of the Multi-Pressure Locomotive

A description of the running gear and tender and a report on the operation and maintenance of C. P. R. Locomotive No. 8000

A SYMPOSIUM of three papers discussing the design and performance of the Canadian Pacific multi-pressure locomotive No. 8000 was presented at the spring meeting of the American Society of Mechanical Engineers, held at Bigwin, Ont., June 27 to July 1, 1932. An abstract of the first of these papers, by F. A. Schaff, president of the Superheater Company, appeared in last week's issue. This article includes the abstracts of the papers of J. B. Ennis, vice-president, American Locomotive Company, and H. B. Bowen, chief of motive power and rolling stock, Canadian Pacific.

Machinery, Chassis and Tender Of the C. P. R. Locomotive

By J. B. Ennis*

In the development of the multi-pressure locomotive it was the intention from the start to deviate as little as possible from the conventional lines of locomotive design and to use as many parts of the Canadian Pacific Class T-1 locomotive as practicable. This locomotive, built by the Montreal Locomotive Works in 1929, is the most powerful freight locomotive of the Canadian Pacific. Its total weight is 370,000 lb., its weight on drivers is 312,800 lb., and its tractive force 77,200 lb. without the booster. The multi-pressure locomotive was supposed to be not less, and if possible more, powerful than the Class T-1, without increasing the number of wheels. Therefore, the requirement to adhere, in general, to the design of the Class T-1 locomotive was natural.

In two major respects, however, novel features had to be introduced: in the locomotive engine and in the structural connection of the boiler and locomotive chassis.

Regarding the locomotive engine, it was estimated that 63,000 lb. of steam would be furnished, of which approximately 56 to 47.6 per cent would be high-pressure steam of 850 lb. pressure, and the remainder of 250 lb. pressure. Both high- and low-pressure steam were supposed to be superheated. It was expected that the total temperature of the first would be between 600 deg. and 800 deg. F., while the total low-pressure steam temperature would fluctuate between 550 deg. and 725 deg. F., depending on the rate of firing.

To utilize the heat contained in the steam in the most efficient manner, it is necessary to use double-expansion for the high-pressure steam. The most practical combination of the two-stage expansion with one-stage expansion of the low-pressure steam generated separately, is the one applied in the Schmidt-Henschel Locomotive of the German State Railways, namely, the mixing of the exhaust from the first stage of the high-pressure expansion with the low-pressure live and superheated steam, using this mixture for the second stage of the expansion. By doing so, the necessity of interstage heating for the high-pressure is eliminated, resulting in simplification of the locomotive.

It is obvious that more than two cylinders are necessary for this scheme. The cross-compound system is not possible in view of the excessive size of the single low-pressure cylinder for a locomotive with 320,000 lb. weight on the drivers. Either three or four cylinders are necessary, and then several cylinder arrangements could be considered:

1—A tandem compound arrangement, having the advantage of the outside location of all four cylinders without the disadvantage of a crank axle. The drawback, however, being heavy reciprocating parts, resulting in poor balancing, the inaccessibility of piston-rod packings between the cylinders, and the undesirable lengthening of the front part of the locomotive, with ensuing increase in weight.

2—A four-cylinder compound arangement as used in the high-pressure locomotive of the French Paris-Lyons-Mediterranean Railway. This would require a two-crank axle, which, in view of the power of the locomotive, it would be impossible to construct in the limited space between the frames.

* Vice-President, American Locomotive Company, New York.

3—A three-cylinder arrangement with a single crank axle as used in the Schmidt-Henschel locomotive, with a middle high-pressure and two outside low-pressure cylinders.

4—A three-cylinder arrangement differing from the foregoing by making one inside low-pressure cylinder between the frames and two outside high-pressure cylinders. This would also require too large a cylinder, which it would be impossible to place inside the frames.

Thus, of all the four arrangements, the most practical seemed to be the third. Although this necessitated the use of a crank axle, it was thought that as the power on the middle pin is less than in the three-cylinder 4-12-2 type Union Pacific locomotive,* a satisfactory three-cylinder arrangement could be worked out.

Distribution of Power

Having decided on this, the next question was the distribution of power. The most natural thing to do would be to divide the power equally between the cylinders. It was not so much the division of tractive force at starting, as the proper division of power under running conditions, as the overall efficiency would be more affected by the latter than by the former. On the other hand, it was rather desired to get slightly less tractive force from the middle cylinder so as to protect the middle main pin.

The three-cylinder arrangement with two working pressures offers a very convenient means for equalizing power without exceeding stresses in the middle pin, by introducing a longer cutoff in the middle cylinder. By doing so, the size of the cylinder can be made smaller and thus the piston thrust in the middle cylinder can be kept within limits. However, this would mean either introducing a complication in the valve gear, or using an independent valve motion for the middle cylinder, whereas from the start it was agreed to use the Gresley valve motion, as in the majority of three-cylinder locomotives built in this country. In view of this, it was decided to make the cutoffs in all three cylinders equal by using the Gresley gear, and to compromise between division of power at starting and under running conditions in such a way as to keep the diameter of the middle cylinder as small as possible.

A study of indicator cards for different cutoffs and various cylinder sizes was made, in connection with service conditions and boiler capacities, and it was found that the ratio of volume of the two low-pressure cylinders to that of the high pressure cylinder should be 5.4. This determined the following dimensions for the cylinders: 15½ in. diameter and 28-in. stroke for the middle high-pressure cylinder, and 24 in. diameter and 30-in. stroke for the two outside low-pressure cylinders.

On the basis of 850 and 250 lb. pressure in the two boilers, the diameter of driving wheels was made 63 in. 85 per cent coefficient in the tractive force formula, and making allowance for the areas of the high-pressure piston rod and piston-rod extension, the tractive force was estimated to be 83,300 lb., corresponding to 3.84 factor of adhesion. A study of tangential forces in this three-cylinder locomotive proved that this factor should not cause slipping of the locomotive.

In view of some uncertainty in distribution of power under actual conditions which this experimental locomotive will have to meet, provision was made for the possibility of a slight change in the sizes of cylinders by making bushings in the cylinders of sufficent thickness.

The middle cylinder is of the same type as used on ordinary three-cylinder locomotives, with the cylinder barrel, steam chest and boiler saddle cast in one piece. In this case, the front bumper and bumper bracket are cast integral with the cylinder. Special precaution has been taken to make the bolting of the cylinder as rigid as possible.

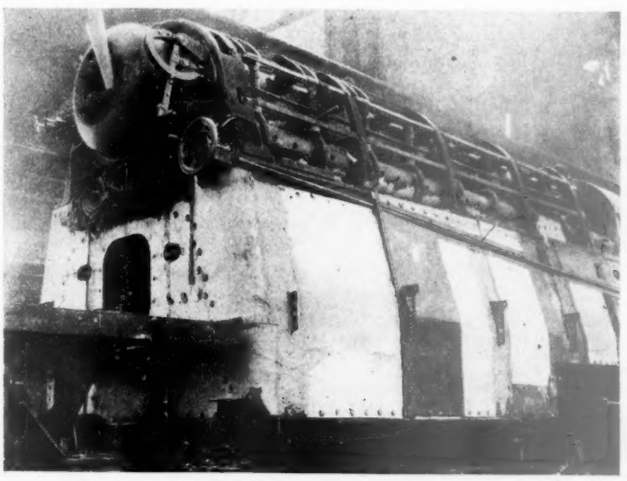
Steam Distribution

The cylinder is made of cast steel to a special specification, with a silicon content of .40 per cent and manganese .82 per cent. The cylinder barrel is inclined at an angle of 8 deg. 31 min. to the horizontal to permit the middle main rod to clear the front driving axle, the second being the crank axle. The cylinder bushing is made of high grade cast iron of a composition insuring good wearing qualities. The steam chest is horizontal, as the case usually is in three-cylinder locomotives with Gresley valve motion, and has two high grade cast-iron bushings for the high pressure 6-in. piston valve. Steam is admitted between the piston-valve heads (inside steam admission) through a 4½-in. steam pipe. The exhaust is directed through two 5-in. openings, one on each side of the cylinder, into the two mixing chambers, where it meets the low-pressure superheated steam and whence it is further directed into the two low-pressure cylinders.

The exhausts from the outside cylinders have to pass through the middle cylinder into the exhaust pipe and nozzle. A rectangular 5½-in. by 10-in. opening is provided on each side of the middle cylinder in the fitting surface. To insure tightness between the middle and outside cylinders, special copper wire interwoven asbestos gaskets are used. Provision is made for passing the booster exhaust through a specially made passage in the saddle into the exhaust pipe, in case of future application of a booster. The openings for the booster pipe connections are, for the present, blocked off by welded-in plates.

The valve gear for the outside cylinders is of the Walschaert type and gives 7½-in. valve travel. The valve motion for the inside cylinder is derived from the two outside gears by the combined Gresley valve motion frequently used on three-cylinder locomotives in America. The Gresley levers have ball bearings in the main fulcrum and in the connection between the two levers. As stated above, the travel and cutoffs are the same in all cylinders. The reverse is of the screw type, which is standard on the Canadian Pacific. No power reverse is used.

In the multi-pressure locomotive the low-pressure



Special Framing and Air-Tight Casing Used in the Construction of the Firebox

* See the May 15, 1926, issue of the *Railway Age*, page 1295.

boiler is in principle of the same design as the conventional boiler. The high-pressure boiler in itself, however, does not offer sufficent rigidity to the locomotive structure. It was, therefore, necessary to enclose the firebox and the combustion chamber in a special framing which would form a rigid connection between the boiler and locomotive frame.

Moreover, a water-tube firebox requires an air-tight casing which will not permit outside air to enter the firebox, except the air which is admitted for proper combustion through the ash pan.

The general design of the locomotive chassis, including the frames, wheels, brake rigging, etc. is very similar to that of the Canadian Pacific 2-10-4 locomotive, Class T-1, except of the parts which were affected by the difference in the type of boiler and machinery. As a matter of fact, a great number of parts and the tender as a whole are practically identical. The locomotive frame, however, for this experimental engine was not a locomotive bed as in the T-1 class, but of the built-up type, consisting of two frames (right and left) 6½-in. thick, made of nickel cast steel.

The locomotive is designed to negotiate 18-deg. curves. For this purpose the front axle has the Alco lateral-motion device, with a play of 1 in. on each side. The front engine truck is of the Commonwealth two-wheel, cast-steel, outside-bearing type with 7¼ in. lateral movement, while the trailing truck is of the four-wheel, cast-steel, Commonwealth type, with 10¼ in. lateral displacement necessary for 18-deg. curves.

Following the example of the German State Railway locomotive, the cranks were spaced at approximately 120 deg. for the sake of torque uniformity. As it was expected, this crank setting resulted in an uneven exhaust sound. The engine being of the compound type and having only four exhausts per revolution, sounds "lame" at low speeds, but at speeds above 15 miles per hour, the nonuniformity of the exhaust vanishes.

The crank setting is, of course, corrected for the inclination of the middle cylinder and for the difference in strokes of the high and low-pressure cylinders. For the middle crank it is 129 deg. 12 min. with the left-hand crank, and 110 deg. 48 min. with the right-hand crank, the right being the leading. The angle between the two outside cranks is exactly 120 deg.

The counterbalances for the reciprocating weights are distributed evenly between all driving wheels except the main. The total percentage of counterbalancing of the locomotive, figured by the static method, is 34.75 per cent.

All driving and trailer-truck wheels of the locomotive have brakes operated by a Westinghouse automatic brake equipment, with 8½-in. cross-compound air compressor. The driving wheel brakes are divided in two sections, the front section operating the three front axles from two 14-in. by 10-in. cylinders, while the back portion operates the two rear pair of drivers from two 12-in. by 10-in. cylinders. The trailer truck has a separate brake applied to all wheels, using two 8-in. by 12-in. cylinders. Three main reservoirs are used on the locomotive, with a total capacity of approximately 80,000 cu. in.

All steam auxiliaries are operated by low pressure, except the two high-pressure pumps which are operated by high-pressure steam. There are two cab turrets, one for superheated and one for saturated steam. The first has connections to the high- and low-pressure feed pump, the air compressor, the blower, the oil-burner operating valves, the mechanical-lubricator heating coil, the headlight dynamo and the whistle. The second turret has valves to the steam-heat line and to the injector.

C.P.R. Multi-Pressure Locomotive—Its Operation and Maintenance

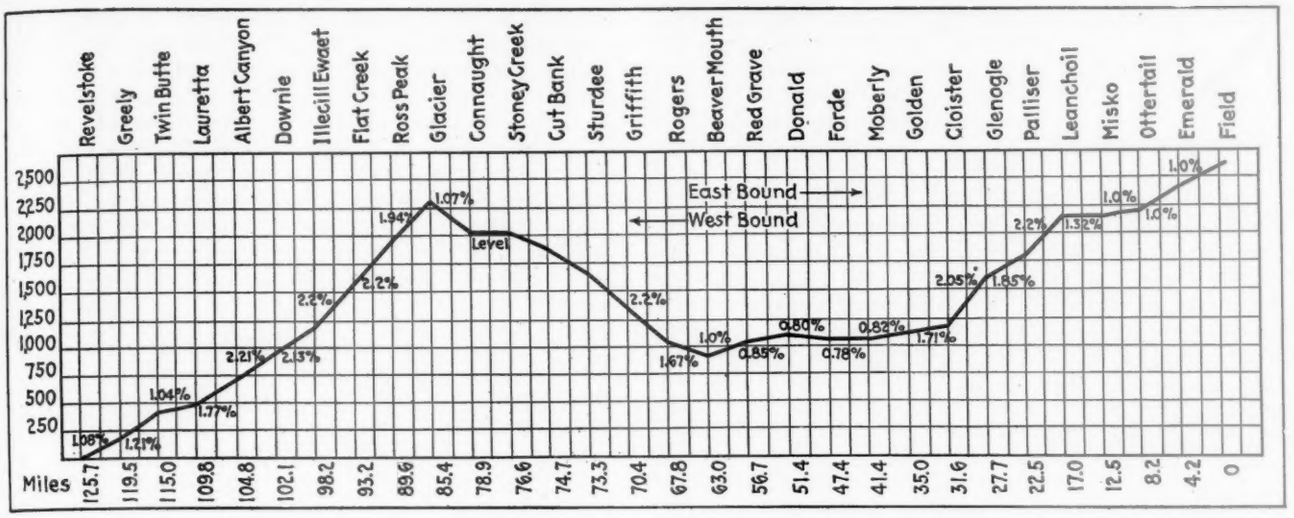
By H. B. Bowen*

Increasing steam pressures and temperatures have to a great extent been the measure of the progress made in the development of greater power at reduced cost. While locomotive development has made marked ad-

* Chief of Motive Power and Rolling Stock, Canadian Pacific.

Performance Record T4 and T1 Class Locomotives

Class	T4-a	T4-a	T4-a	T4-a avg.	Improvement T4-a over T1, per cent	T1-a avg.	T1-a	T1-a	T1-a
Locomotive No.	8000	8000	8000	.....	.....	.....	5907	5905	5905
Beavermouth to Glacier (Westbound) 22.5 Miles									
Date	4-23-32	4-15-32	6-22-32	.....	.....	.....	4-26-32	4-28-32	.....
No. of cars, total	37	44	16	.....	.....	.....	20	17	.....
Weight of train, equiv. gross tons	1,029	1,060	1,103	1,064	.....	1,069.5	1,046	1,093	.....
Equiv. gross ton-miles	23,152	23,850	24,818	23,940	.....	24,063	23,535	24,592	.....
Lb. of oil, total	3,374.8	4,399.8	4,689.9	4,154.7	.....	4,878.4	5,144.4	4,612.5	.....
Lb. of oil used per 1,000 equiv. g.t.m.	146.0	184.8	188.9	173.2	14.9	203.5	218.8	188.2	.....
Lb. of oil used per locomotive mile	149.9	195.5	208.4	184.6	.....	216.8	228.6	205.0	.....
Lb. of water, total	47,850	47,130	49,150	48,040	.....	49,885	47,840	51,930	.....
Lb. of water used per lb. of oil	14.2	10.7	10.47	10.79	5.3	10.25	9.3	11.2	.....
Total time on road	1 hr. 16 min.	1 hr. 45 min.	1 hr. 47 min.	1 hr. 36 min.	.....	1 hr. 24 min.	1 hr. 18 min.	1 hr. 31 min.	.....
No. of stops	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total time delayed	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ruling grade and curve	2.2 per cent, 10 deg.	2.2 per cent, 10 deg.	2.2 per cent, 10 deg.	.....	.....	.....	2.2 per cent, 10 deg.	2.2 per cent, 10 deg.	.....
Albert Canyon to Glacier (Eastbound) 19.4 miles									
Date	4-30-32	6-15-32	6-23-32	.....	.....	.....	4-25-32	4-27-32	4-29-32
No. of cars, total	49	37	41	.....	.....	.....	44	45	44
Weight of train, equiv. gross tons	1,088	1,076	1,108	1,090.6	.....	1,053	1,058	1,051	1,052
Equiv. gross ton-miles	21,107	20,874	21,495	21,158.6	.....	20,441	20,525	20,389	20,408
Lb. of oil, total	4,583.5	4,960.7	4,951	4,831.7	.....	5,467	5,424.8	5,753.6	5,192.7
Lb. of oil used per 1,000 equiv. g.t.m.	217.1	237.6	230.3	228.3	14.7	267	264.6	283.4	254
Lb. of oil used per locomotive-mile	236.2	255.7	255.2	249	.....	281.2	279.5	296.5	267.6
Lb. of water, total	54,460	49,150	54,070	52.560	.....	54,040	50,570	53,270	58,270
Lb. of water used per lb. of oil	11.88	9.9	10.92	10.9	10.1	9.9	9.3	9.2	11.2
Total time on road	1 hr. 52 min.	1 hr. 19 min.	1 hr. 48 min.	1 hr. 40 min.	.....	1 hr. 33 min.	1 hr. 23 min.	1 hr. 51 min.	1 hr. 26 min.
No. of stops	2	.....	1	1	.....	2	2	1	3
Total time delayed	29 min.	.....	20 min.	16 min.	.....	2 min.	2 min.	1 min.	2 min.
Ruling grade and curve	2.2 per cent, 10 deg.	2.2 per cent, 10 deg.	2.2 per cent, 10 deg.	.....	.....	.....	2.2 per cent, 10 deg.	2.2 per cent, 10 deg.	2.2 per cent, 10 deg.



Profile of the Canadian Pacific Line Between Revelstoke and Field Over Which Locomotive No. 8000 Is Operating

vances, it has nevertheless, lagged behind stationary practice in utilizing the manifest advantages of higher pressures. Conventional locomotive design, with a large diameter fire-tube boiler construction, definitely restricts the maximum pressure that can be used, and the Canadian Pacific has gone nearly as far as practical in the increasing of steam pressures with the conventional form of locomotive boiler construction.

All obtainable information concerning new types of locomotives has been studied and such designs as had been transformed into reality have been investigated thoroughly. In 1929 the writer, during a trip to Europe, investigated carefully all of the available examples of new and improved types of locomotives. Conferences with the Superheater Company, Ltd., and its associate organizations, both in the United States and abroad, resulted in further investigations being made of locomotives in England and on the Continent, which utilized the multi-pressure system of steam generation.

Conferences with officers of the German State Railways, the London, Midland & Scottish in England, and the Paris, Lyons & Mediterranean Lines in France, had served to focus attention upon this type of steam-generating apparatus. Subsequently, further conferences with the American Locomotive Company and the Superheater Company resulted in the decision by the railroad to construct a heavy freight locomotive suitable for service on its severe mountain divisions, and its 2-10-4 type locomotive No. 8000, is the result. This locomotive is termed the T-4-A class and is, so far as its running gear is concerned, a close duplicate of the T-1 class locomotives which are now the standard locomotive for the service referred to. While the T-4-A class is slightly heavier as to total weights, it is, nevertheless, very closely the same as the T-1 class in so far as weight on the drivers is concerned.

Advantages of High Steam Pressures

The three-cylinder arrangement has permitted satisfactory operation with a somewhat lower factor of adhesion and, consequently, has a somewhat larger tractive force. High pressures and temperatures are not only attractive from the standpoint of improved thermodynamic performance, but in themselves bring about desirable changes in construction and performance. For example, higher pressures necessitate multi-cylinder construction to fully utilize the steam expansively. This immediately gives a more uniform torque and permits lowering the adhesion factor between the driving wheels and the rails, which in turn provides for the better utilization of weight. Higher pressures give a better steam flow and reduce proportionate pressure drops. It is customary to allow a 15 per cent drop in boiler pressure in figuring the maximum tractive force. This loss, however, is reduced as the pressure rises, giving greater proportionate tractive forces. Higher pressure means smaller cylinders, removing some of the restrictions due to large cylinders as determined by customary boiler pressures. The higher density also provides for the use of smaller pipes for feeding both cylinders and auxiliaries, which is a most grateful relief to those who have struggled in trying to fit in the maze of complicated piping required by even the comparatively simpler conventional type of locomotive.

Canadian Pacific Locomotive No. 8000

Multi-pressure locomotive No. 8000 is the joint production of the Superheater Company, the American Locomotive Company and the Canadian Pacific, who are, respectively, responsible for the high-pressure steam generating system, the three-cylinder arrangement, valve motion and the general locomotive proportions, and the design and construction, which was done at our Angus shops, Montreal, Que. It was turned out for operation in July, 1931, and during the ensuing few months the engine was used in freight service between Montreal and Smith Falls, Ont., to determine its operating characteristics and, particularly, to develop the arrangement of oil burners which it was anticipated would have to be somewhat different from the standard burner arrangement used on our western lines.

Construction was commenced in November, 1930. The machinery, together with the low-pressure boiler and firebox framework, was erected in a complete unit, while the closed system and high-pressure boiler were assembled on a jig especially constructed for this purpose in the boiler shop. Work on these separate units progressed simultaneously and on April 10, 1931, the closed system and high-pressure unit being completed, were subjected to a hydrostatic test, each being found tight under the required test pressure. On April 13 the closed circuit and high-pressure unit were released from the jig and transferred to the machinery and low-pressure boiler unit. With the addition of cab, fixtures, fittings and piping, the engine was ready for steam test.

The steam test involving the closed circuit, high-pressure and low-pressure boilers, was carried out in two stages; i. e., it was thought desirable to work gradually

to the maximum. Accordingly, the first test was discontinued when a pressure of 500 lb. per sq. in. was reached in the high-pressure boiler. Full pressure of 850 lb. per sq. in. was reached on final test.

Various features show excellent examples of how metallurgical developments have permitted constructions that would not have been possible with the materials of construction available only a few years ago. Stainless steels for valves and valve seats have surmounted the limitations of bronze and the corrosion defects of ordinary steels. Stainless-steel plates have provided a direct baffle for the oil flame to prevent the flame coming in direct contact with the drums. These plates, while resistant to high temperatures, have given some trouble on account of expansion, which necessitated some changes in clearance. Low-carbon nickel steel for seamless drum construction has permitted high factors of safety with reduced weight. Nickel-steel boiler plate in the low-pressure boiler has also given the requisite strength with approximately 30 per cent reduction in weight. Nickel-steel forgings have provided toughness and resistance to abuse and impact with minimum weight in various driving and motion parts.

It is customary on the Canadian Pacific to operate locomotives by the pool system. Naturally, it is desirable to make the operation of all locomotives as simple and as uniform as possible. This was kept in mind in all controls for locomotive No. 8000, and in spite of there being two superheaters and two throttles for the high- and low-pressure cylinders, the throttle mechanism was worked out so that only one throttle lever is used for opening both throttles.

The operation is identical with that of an ordinary locomotive. The low-pressure boiler is fed with a standard Elesco CF-1 feed pump and is provided with a Hancock inspirator as an auxiliary. Incidentally, the CF-1 pump for the low-pressure boiler is located within a compartment provided in the tender tank; a location that we had previously tried out with considerable success and advantage. The high-pressure boiler is pumped with a specially designed CF-1 boiler feed pump adapted to high-pressure service. A duplicate of this pump is also provided as a standby and auxiliary in connection with feeding the high-pressure boiler. The high-pressure water pumps are located one on either side of the boiler.

The cut-off control in the valve motion is a straight duplicate of that of an ordinary locomotive. The oil-burner control is also identical and the only deviation is the two varying water levels for the high- and low-pressure boilers, respectively, and the two boiler-feed pumps for feeding these two boilers. The cross-over valve is an addition and there are other features that require periodic checks by the engineman, but these have all been so simplified that it has not constituted any objection from the standpoint of simplicity of operation. In fact, after the initial period the locomotive was turned into the regular pool and is now handled by any engineman who may be assigned to it on any individual run. There has been keen interest on the part of the enginemen and a desire to be assigned to locomotive No. 8000.

Operating Over 2.2 Per Cent Grades

The most difficult operating problem on the Canadian Pacific is the movement of both freight and passenger traffic over the Mountain sub-division in British Columbia. Numerous heavy grades are encountered, the worst of which is 22.5 continuous miles of almost uniform 2.2 per cent grade.

In 1929, 20 new locomotives were put in service on this sub-division, of the 2-10-4 wheel arrangement, using 275 lb. boiler pressure and two simple cylinders. These locomotives immediately introduced new standards of economy and performance, and by no means the easiest problem was selected when the Canadian Pacific decided to construct for direct comparison a multi-pressure locomotive of substantially the same weight, wheel arrangement and proportions as the T-1 class engines now handling traffic on this sub-division.

Locomotive No. 8000 burns oil as fuel and the proportions of the flash pan, size, number and location of oil burners constituted a real problem, as there was practically no precedent on which to base the design. When the locomotive was originally turned out, several experiments were made with location of a single burner and a double burner, and after a considerable amount of experimenting, proper locations for two burners were decided upon, one of which amply provides for ordinary demands with the second one being cut in when required by abnormal conditions.

It will be appreciated just how difficult this problem was when it is understood that three separate boilers—the closed system, the high-pressure boiler and the low-pressure boiler—are all supported by the one firebox and combination of burners, and that a balance in the heat distribution must be maintained between these three heat-absorbing units through a wide range in steam demands of the locomotive.

This has been partially offset by introducing a by-pass valve from the high-pressure to the low-pressure boiler so that excess steam can be by-passed without losing it through the safety valves. Even as yet this by-pass arrangement is used to some extent, but, of course, the ideal solution to be accomplished is the final adjustment and balance of component features of operation so as to obviate entirely the necessity of any by-passing.

This can, of course, only be accomplished by close observation and adjustment of the locomotive in operation until the final proportions and adjustments are definitely determined. Originally, the cross-over valve gave trouble in that it caused severe disturbances of the water due to by-passing the high-pressure steam, which was overcome by a change in design of the valve outlet into the low-pressure boiler.

Proper draft adjustments and boiler conditions are somewhat more difficult to secure with locomotive No. 8000 as the exhausts are secured at uneven intervals. The uneven effects of the exhaust on the draft conditions of the engine are more noticeable at low speeds. This has been greatly improved with better combustion and increased superheat temperatures by installing baffle plates in the smokebox with apertures to more evenly diffuse the draft, a change in stack diameter and changes in the exhaust nozzle. While great improvements have been effected, the problem is so different from an ordinary locomotive that still further improvements can be expected.

In operation the locomotive has thoroughly lived up to expectations in the matter of uniform torque, marked advantages in hauling heavy loads at low speeds due to more even torque, smooth running development of maximum tractive force and slipping far less than the T-1 engines under adverse rail conditions.

At the present time there is no doubt as to the increased maintenance cost of the multi-pressure engine over that of the conventional simple locomotives operating over the same division. This is generally true of locomotives radically different in design and con-

(Continued on page 338)

R. E. M. Cowie Retires; L. O. Head Elected President of Express Agency

Former, nearly 50 years in business, served previously as chief executive of American Railway Express Company

ROBERT E. M. COWIE, president of the Railway Express Agency since its formation early in 1929 and associated with the express business since 1883, retired on August 31 and L. O. Head, vice-president of the Express Agency at Chicago, has been elected to the presidency. Pending his formal retirement under the pension rules of the company next February, the board of directors has voted Mr. Cowie the honorary position of president retired.

R. E. M. Cowie

L. O. Head

This latter action, the announcement of the board says, is "in recognition of his long and valued services. Mr. Cowie's whole business life has been devoted to the express field, he having worked his way through the ranks and risen to the post of chief executive officer of the express network of the country, performing much of the pioneering work in the organization and development of this complex traffic."

Mr. Cowie succeeded the late George C. Taylor in the presidency of the American Railway Express Company, the predecessor to the Railway Express Agency. This was in 1923 and thus Mr. Cowie's administration saw the transfer on March 1, 1929, of the express business to the railway affiliate of which he became the first president. Also, during the years of his term, the American Railway Express Company and the Railway Express Agency, in turn, have, like the railroads, been confronted with new traffic problems attendant upon the growth of competitive motor freight services on the highways. But the Express Agency under Mr. Cowie's direction has been alert in the face of these new conditions; it has been ever ready when called upon to co-operate with the owning railroads in the development of co-ordinated rail and highway freight services. During the past year, for example, it has entered such co-ordinating arrangements for the handling of l.c.l. with the Maine Central, the Pennsylvania and the Reading. Also, on its own account, the Express Agency has recently installed through a subsidiary—Railway Express Motor Transport, Inc.,—experimental over-the-road trucking services on two routes, one between Chicago and Milwaukee, Wis., and the other between Chicago and South Bend, Ind. The Express Agency is at present one of the four largest operators of motor trucks in the United States, having more than 9,000 motor vehicles in use for the pick-up and delivery of its express business.

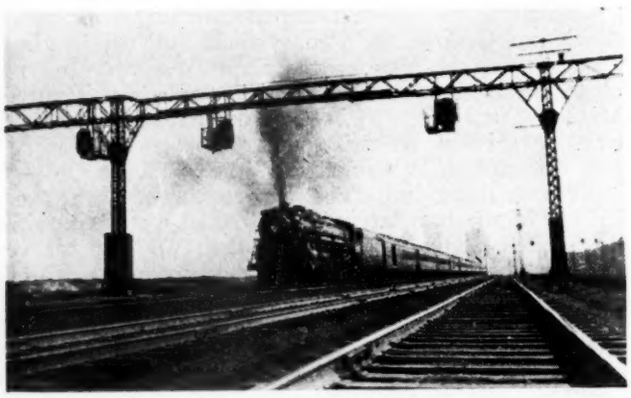
Robert E. M. Cowie was born in Scotland, the son of a clergyman and came to the United States at the age of 16 years. Shortly after his arrival he procured, in October, 1883, a position as a junior clerk in the Cleve-

land, Ohio, office of the American Express Company, the express business of which was on July 1, 1918, merged with that of other companies to form the American Railway Express Company. In 1886, Mr. Cowie was appointed secretary to the general superintendent in Cleveland and was later transferred to Chicago, serving there successively as secretary to the general manager and chief assistant to the vice-president. In 1906 he was appointed assistant general manager, Western departments, with headquarters at Chicago and in 1910 he was promoted to manager, Central departments, with headquarters at Cleveland.

Mr. Cowie next served as manager of Pacific departments at Salt Lake City, Utah, the headquarters later being changed to Denver, Colo., and Los Angeles, Cal., respectively. He was in the West from July, 1910, to January, 1915, when he was appointed vice-president and general manager in charge of Eastern lines with headquarters at New York. When the express business of the American Express Company was taken over by the American Railway Express Company in 1918, Mr. Cowie remained in New York as vice-president of the latter, in charge of operations in the East. In 1923 he was elected president, a position he has retained with the Railway Express Agency since March 1, 1929, when it took over the express business of the American Railway Express Company.

Leon O. Head was born at Milner, Ga., on April 23, 1879. He was educated at Central College, Walnut Springs, Texas, and Ouachita College, Arkansas, from which institution he received his B.A. degree in 1898. He entered railway service with the Texas Central (part of M-K-T of Texas) as clerk and agent in 1898. From 1901 until 1903 he was agent for Wells Fargo & Company, at Lake Charles, La., serving successively with that company until 1916 as route agent at Dallas, Tex., chief route agent at Houston, Tex., general agent at New Orleans, superintendent of the Arkansas division, with headquarters at Little Rock, efficiency superintendent at Houston and general superintendent at Los Angeles. He was appointed assistant to the vice-president of Wells Fargo & Company in 1916 and in 1918 when the latter and other companies consolidated to form the American Railway Express Company, Mr. Head was appointed to the same position with the express company. He was appointed vice-president of the American Railway Express Company in 1927, and in 1929, when it became the Railway Express Agency, he was appointed to the same position with the latter company, with jurisdiction over Western departments, with headquarters at San Francisco. In March, 1932, Mr. Head was transferred to Chicago and his jurisdiction extended to include also a portion of the Central department.

* * *



The Michigan Central's "Wolverine" Westbound into Chicago

Railways Urged To Stimulate Employment

WASHINGTON, D. C.

RENEWED efforts to embark the railways, or as many of them as possible, on a plan for promoting increased employment and stimulating industry through expansion of maintenance of equipment and purchase of new equipment with funds to be loaned on a deferred-interest plan by the Reconstruction Finance Corporation were made a part of the program adopted at the national conference of banking and industrial committees of the Federal Reserve Districts held on August 26 at the call of President Hoover. However, the rate of interest proposed, 5 per cent, is such that it is understood that few railroads feel that they would be warranted in increasing their indebtedness for the purpose.

A central committee to co-ordinate the activities of federal agencies and private business in an immediate six-point campaign to expand credit and spread employment was appointed, with Henry M. Robinson, Los Angeles banker, as chairman, and with six sub-committees to consider the various phases of the program. Daniel Willard, president of the Baltimore & Ohio, and George H. Houston, president of the Baldwin Locomotive Works, were named as members of the railway sub-committee, and others were appointed to deal with such subjects as credit, expansion of capital expenditures by industry in the way of replacement of obsolete and worn out equipment and otherwise, increased employment through the sharing-work movement, stimulation of repair and improvement of homes, and assistance to home-owners with maturing mortgages. A. W. Robertson, chairman of the board of the Westinghouse Electric & Manufacturing Company, was appointed chairman of the capital expenditures sub-committee and Robert P. Lamont, former Secretary of Commerce, was made a member of the central committee.

The plan for enlisting the co-operation of the railways in the program is that which has been discussed in several preliminary informal conferences by Mr. Willard and other railway officers with government officials and members of the board of the R. F. C. and of the Interstate Commerce Commission. It was recently laid before a general meeting of the Association of Railway Executives at New York at which it was referred to the individual companies without recommendation and up to the time of the national conference only the B. & O. and the Pennsylvania had indicated their intention of applying for loans on the terms offered.

It is proposed to make the loans available at 5 per cent interest, whereas the R. F. C. has been charging the roads 6 per cent on loans which it has been making largely for the purpose of meeting maturing obligations, and, in recognition of the fact that the proposed work is not now required by the roads, to defer the payment of interest until the equipment is placed in service. To avoid imposing additional collateral requirements on the roads, which have already pledged most of their available resources for loans from the banks, the R. F. C. and the Railroad Credit Corporation, it is proposed to accept their notes or equipment trust certificates as security. Also it is understood that the Interstate Commerce Commission is prepared to waive its accounting requirements on application in particular instances so that the expenditures may be charged to a suspense account without increasing the operating expense accounts until the equipment is put into service.

President Hoover, in his opening address to the conference, described its purpose as "to better organize private initiative and to co-ordinate it with governmental activities so as to further aid in the progress of recovery of business, agriculture and employment," saying that "we are convinced that we have overcome the major financial crisis" and "are now able to take further steps in solution of the industrial and agricultural problems with which we are still confronted."

Ogden L. Mills, Secretary of the Treasury, who outlined the program which had been suggested in earlier preliminary conferences and which was adopted by the conference, said that recent developments "justify the conclusion that the time has come to make a definite and concerted effort to use the present low plateau upon which we now stand as a base for the beginning of an upward movement that will make for increased employment and the betterment of business." He also referred to some of the programs proposed as already well under way and to the efforts already made as having contributed to bringing the question of increased railway activity to the attention of the railroad executives, the Interstate Commerce Commission and the R. F. C. "and to the development of a plan which would make this feasible."

The plan for extending further credit to such railways as are willing to take advantage of it to increase their expenditures for maintenance or for modernizing their equipment was discussed in informal addresses before the general conference by Mr. Willard and Mr. Houston. Mr. Willard said that the R. F. C. has proposed a plan to the railroads, although he did not describe the details, and that it had been brought to the attention of all the railway executives at a recent meeting in New York. He emphasized that it was a matter for the individual roads to decide for themselves, rather than through an association, but that the government was willing to extend aid to those that could make use of it, under a plan by which the interest would accrue but would go uncollected for a time. He said that while the repairs or new purchases were not needed at this time and may not be needed for some time to come they might enable the roads to take better advantage of a business upturn when it comes and the work could now be done at low prices. Mr. Willard emphasized that the problem involves more than an economic question and is a social one as well. He referred to the large number of unemployed men in the country and said that if all of the big railroads of the country could adopt the plan many thousands of men might be called back to work both on the railroads and in the industries that furnish materials and supplies. He added that the Baltimore & Ohio would co-operate in the plan and had arranged to take a loan of $3,000,000 for the purpose and he expressed the hope that many of the roads would take advantage of the plan.

A subsequent announcement stated that the board of directors of the Baltimore & Ohio had formally authorized President Willard to arrange for this $3,000,000 loan on terms outlined by the Reconstruction Finance Corporation. The money is to be used for heavy repairs to 150 locomotives and 2,500 freight cars and for completing the construction of 1,000 new freight cars which had been started some time ago but work on which had been stopped before the job was finished. It is estimated that probably not less than $2,000,000 of this amount will be paid directly to labor and will mean the employment of about 2,000 men for at least six months. The remaining $1,000,000 will probably be required for materials to be purchased which in turn will mean the employment of additional men.

Mr. Houston explained some features of the plan for financing the acquisition of equipment and said he believed that carriers now have an opportunity to help the country out of depression by buying more than actual requirements.

Atlee Pomerene, chairman of the board of the R. F. C., replied to criticisms that the corporation is aiding banks and railroads without doing anything for individuals by pointing out that most of the loans have been made to small banks and have aided the individual depositors while greatly reducing bank failures and that every holder of an insurance policy has been benefited by the loans to railroads.

Railroads also will be invited, along with other large employers, to cooperate in the movement for spreading employment among the largest possible number of men by reducing the working time. Members of the committee headed by Walter C. Teagle, President of the Standard Oil Company of New Jersey, will attempt to make suggestions as to how this may be applied to other employers in their own lines of business but without emphasizing any particular method. The expressions "six-hour day" and "five day week" as used at the conference were intended merely as illustrative of any method of dividing the available employment among more men and without thought of paying a full week's or day's wage for the shortened time. President Hoover in his opening address said: "It is doubtful whether any action we could take at this time would so greatly accelerate our progress, serve the welfare of our unemployed millions, or so quickly give us as a nation the benefit of widespread spending power as a further spread of equitable plans for sharing the available work. As a matter of national policy, the shortening of hours is necessary not alone to meet the need of the moment but it may be necessary to take up the slack in the future from the vast and sudden advance in labor-saving devices."

A series of charts and statistical statements showing the marked reduction in railway maintenance and capital expenditures since 1930 and the increase in the number of bad order and surplus freight cars, accompanied by a reduction in the number of railway carmen employed, had been prepared for the use of the conference by the Transportation Division of the Department of Commerce. For instance it was shown that the number of bad order cars had increased from 118,807 in January, 1930 to 230,820 on June 1, 1932, while the percentage had increased from 5.4 to 10.8. The number of freight carmen, including car inspectors, showed a decrease from 73,071 in 1929 and 69,875 in 1930 to 45,253 in 1932. The freight car surplus as of the first half of June was shown as 757,419.

The Reconstruction Finance Corporation had approved loans to 49 railroads, including six in receivership, amounting to $240,989,000 up to August 25, according to Jesse H. Jones, a director of the corporation, who gave a radio address regarding its work on August 29. At that time the Interstate Commerce Commission had approved loans amounting to approximately $290,000,000 and it has since approved about $10,000,000 more.

These loans to railroads represent approximately 18 per cent of the total of $1,331,724,000 of loans approved by the corporation to that date, Mr. Jones said, adding that "undoubtedly these railroad loans have, in some instances, prevented receiverships, and have had a very decided and helpful effect on the value of railroad securities." He also pointed out that in avoiding railroad receiverships the corporation has contributed substantially to trust investments.

Pennsylvania Expedites Trains with Signaling on 132-Mile Line

Higher train speeds and closer spacing between following trains saves 49 train-hours daily

The Automatic Block Signals Are of the Position-Light Type

THE installation of automatic block signals on a 132-mile double-track freight line of the Pennsylvania Railroad between Enola, Pa., near Harrisburg, and West Morrisville, Pa., near Trenton, N. J., has effected marked economies in train operation. Under the former arrangement with manual block stations from 10 to 14 miles apart, the trains running under permissive signals were operated at reduced speed prepared to stop short of any train ahead. With the automatic signals trains can be run at higher speeds with safety even with closer spacing between following trains. This is one of the principal factors which has resulted in the average freight-train speed being increased, thus saving approximately 49 train-hours daily, the overtime wages saved representing 37.5 per cent annually on the cost of installing the signaling system.

Track Layout of Line

This line, which was constructed on a low-grade for handling through freight traffic, is double track throughout with the exception of a 9.3-mile section between Parkesburg and Thorndale where the four-track main line is used. Although the low-grade line is separate from the main line between Thorndale and Glen Loch, connecting tracks and crossovers at the points mentioned permit various movements between the two lines so that the track capacity of both lines is available between these points. Starting at Enola, the line follows the west bank of the Susquehanna river for 23.5 miles and then crosses to the east side and continues to Columbia, 34 miles from Enola. From this point, the line follows the east bank of the Susquehanna river for 12 miles, then turns eastward across country toward Parkesburg. The grade ascends at a rate of practically 0.3 per cent all the way from Columbia to Tower Q, 30 miles, and from there to tower PG, Parkesburg, 9 miles, descends at about the same rate. The freight line between Thorndale and West Morrisville, known as the Philadelphia and Thorndale and Trenton branches, crosses a rolling country with a maximum grade eastbound of 0.55 per cent, westward as high as 0.69 per cent.

The switches and signals at the east end of the Enola yard are handled by a mechanical interlocking known as "DY". At Cly, 16 miles east of "DY", a set of

Comparison of Train Operation During Two Periods

		December 1 to December 15, 1928				December 1 to December 15, 1929					
Low Grade	Miles	Trains	Total Time Hr. & Min.	Av. Time Per Train Hr. & Min.	M.P.H.	Trains	Total Time Hr. & Min.	Av. Time Per Train Hr. & Min.	M.P.H.	Minutes Gain Per Train	Gain Train-Hours
DY-LG	32.0	346	504:54	1:28	21.8	382	465:38	1:13	26.3	:15	95:30
LG42-DY	32.0	378	702:34	1:51	17.3	334	491:16	1:28	21.8	:23	128:02
LG42-PG	37.7	333	1,013:15	3:00	12.5	360	869:11	2:24	15.7	:36	216:00
PG-LG42	37.7	292	562:29	1:55	19.6	340	571:00	1:41	22.4	:14	79:20
Trenton Br.											
Thorndale-AK	10.3	255	194:15	:45	13.7	298	183:56	:37	16.7	:08	39:44
AK-Thorndale	10.3	194	87:59	:27	22.9	233	90:8	:23	26.8	:04	15:32
AK-CF	39.2	302	721:13	2:26	16.1	346	727:0	2:06	19.4	:20	115:20
CF-AK	39.2	279	683:48	2:24	16.3	307	682:24	2:13	17.6	:11	56:17
											745:05
										Per Day	49:40

Check does not include in either period trains detained due to engine failure, car failure, wrecks, or trains detained setting out or picking up cars.

crossovers, etc. is handled by a mechanical plant. At "RQ" an electric plant handles a main-line crossover and junction with a double-track line to the north. At Columbia, 16 miles east of Cly, a mechanical-type plant, known as "LG42" controls the crossing of another line and also several crossovers and the switches for a passing track on the low-grade line. The switch at the west end of the eastward passing track is power-operated and remotely controlled from the tower. At "SF", Shenk's Ferry, 15.5 miles east of "LG42", a mechanical interlocking handles a set of crossovers and the east end of an eastward passing track, the switch at the west end, over a mile away, being remotely controlled from the tower. At "Q", Quarryville, 11.4 miles east of "SF", a mechanical interlocking handles two crossovers, one facing for each direction and one switch for each of two passing tracks. At "PG" Parkesburg, 10.8 miles east of "Q", an electro-pneumatic interlocking handles the junction of the low-grade line with the 4-6 track main line, and at Thorndale, 9.1 miles east of "PG", a similar plant controls the junction leading to the low-grade line to the northeast.

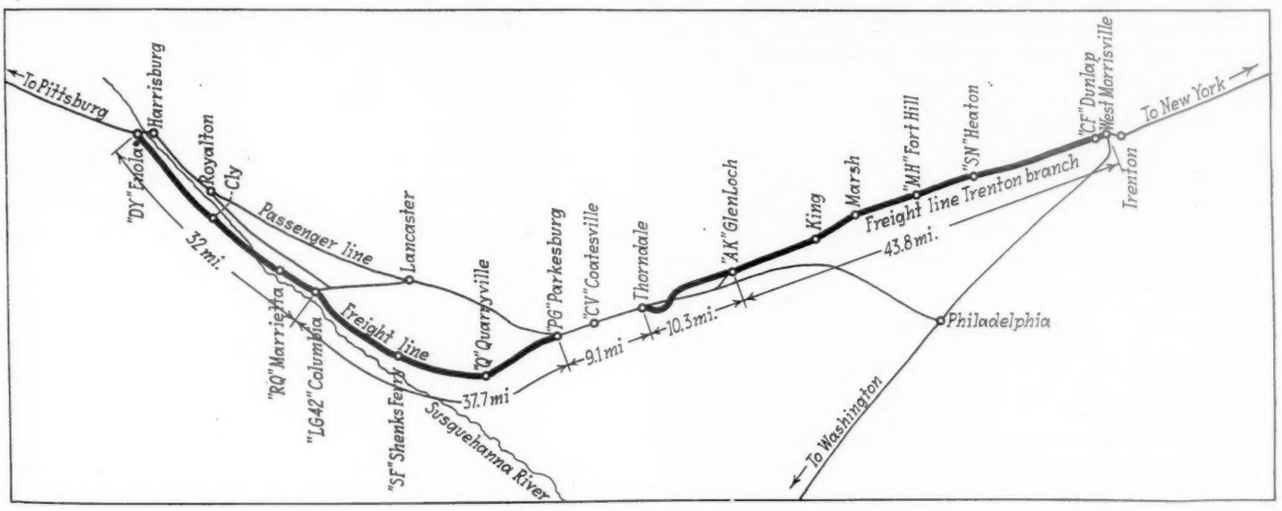
At "AK" Glen Loch, 10.3 miles east of Thorndale, a double-track line from the main line connects with the low-grade line, this junction, together with two crossovers, being handled by a mechanical plant. At King, 10.8 miles east of "AK", are a hand-operated crossover and a manual block station, and the same layout exists at Marsh, 4.4 miles east of King. At "MH", Fort Hill, 5.8 miles east of Marsh, there is a mechanical interlocking which handles a crossover and one end of a westward passing track, and a similar layout at "SN", Heaton, 6 miles east of "MH" is handled by a mechanical plant. At "CF", Dunlap, 12.2 miles east of "SN" a mechanical plant handles three tracts and the entrance to the west end of the West Morrisville yards. Dunlay is the east end of the signaling installation and of the operating division. All the interlocking stations, as well as the offices at Marsh and King, are manual block stations, thus totaling 12 manual blocks ranging from 10 to 14 miles in length.

Average Traffic of 7,000 Cars Daily

As the maximum ruling grade eastward is 0.3 per cent, this line is used for all tonnage trains between Harrisburg and the New York area. Likewise, tonnage freight trains between Harrisburg and Philadelphia are handled over a section of the line between Enola and Parkesburg. In addition, such fast freight as live stock and perishables is routed over this line between Enola and Columbia, thence over the main line to Glen Loch and from there to West Morrisville on the low-grade line again.

On account of the fact that trains can be sent over any one of several different routes, the traffic handled on different sections of the low-grade line varies. The maximum traffic was handled on October 28, 1929, when 9,665 cars passed through Columbia, although an average of 7,008 cars were handled daily in 1929. Three different types of locomotives are assigned to this division; the I class has a tonnage rating of 6,790 tons, the M class 5,560 tons and the L class, 5,350 tons. A train ordinarily consists of 100 to 115 loaded cars with a maximum train length of 125 cars. The number of trains in each direction ranges from 30 to 40 daily, when traffic is normal.

Prior to the installation of automatic signals in 1929, all train movements on this line were governed by manual block with block stations spaced from 10 to 14 miles apart. The volume of traffic was such that practically all trains were being operated under permissive signals and under such circumstances it was necessary to operate at reduced speed, prepared to stop short of a train ahead. Curves are exceedingly numerous on this line and on a considerable proportion of the territory the line follows streams where dense fog is frequently encountered. These physical conditions added further to the difficulty of enginemen securing a view and thus tended to restrict the train speeds. Almost all of the trains were incurring overtime. After making a study of the situation, it was decided to install automatic block signals, thus permitting the trains to run at greater speed with safety, even with closer spacing between following trains.



The Through-Freight Traffic Is Routed Over the Low-Grade Line

Arrangement of Automatic Signaling

The automatic block signaling is arranged for right-hand running, with the signals spaced two miles apart except on certain ascending grades. Starting at a point three miles east of Columbia, the signals on the eastbound track ascending the grade are spaced only one mile apart for 11 miles. This short-block length on the grade increases the track capacity for slow-moving trains by reducing the spacing between trains. Not only in the section just mentioned, but also at all points in the division where signals are located on ascending

grades of 0.3 per cent or more, each signal is equipped with a large letter G, known as a grade sign, which authorizes an engineman of a tonnage train to pass such a signal at slow speed without stopping, when it is indicating that the block is occupied. This grade sign consists of a sheet-metal disk 15 in. in diameter with the letter G in black on a yellow background. The sign is mounted on the signal mast 10 ft. below the center of the signal unit.

Results Satisfactory

The results accomplished by the automatic block signals have been very satisfactory from the standpoint of train operation. A check made of the dispatcher's train sheets for the period of December 1 to 15, 1929, after the signals were in service, as compared with the same period of the previous year before the signals were installed, showed an increase in average train speeds ranging from 1.3 m.p.h. to 4.5 m.p.h. on the different sections. The average time saved amounted to 49.7 train-hours per day. As practically all trains were incurring overtime, this time saving at $5.90 per train-hour totaled $107,029 annually, which represents 37.5 per cent return on $285,042, the cost of the signaling installation. The $5.90 figure includes only the wages for the engine and train crews. If the other items included in the total cost of the overtime train-hour were considered, the savings would be considerably more.

As traffic dropped off during 1931, it was decided, on account of the automatic block signaling, that it would be practicable to close some of the interlockings and block offices, a thing that had never been attempted before. At the present time the interlockings at "Q" Quarryville, "MH" Fort Hill and "SN" Heaton are closed, as is also the manual block office at King. The closing of these four towers effects a saving in operating expense of approximately $25,000 annually, a considerable proportion of which can be credited to the fact that the automatic signaling made it practical to discontinue service at these points.

Signaling Construction

The automatic signals installed on this line are the Pennsylvania standard position-light type, and were manufactured by the Union Switch & Signal Company. As a part of the signaling improvements Union T-10 hand-operated switch and lock movements were installed to replace switch stands for all main-line turnouts and crossovers. The power supply for the signaling is of the a-c. floating system, a 440-volt a-c. line extending the length of the installation on two No. 8 hard-drawn copper wires having weather-proof covering. Power is purchased at various points, each feed extending about four miles in each direction; the line circuits are not extended through to connect with each other, a gap the length of at least one track circuit occurring between each feed section.

Mounted in the instrument case of each cut section location is an 80-v.a. line transformer with four secondaries, one for each track battery rectifier. Mounted in the instrument case of each signal location is a 200-v.a. line transformer with two secondaries, one for the signal lamp feed and the other for the rectifier to charge the main battery. The signals are operated on approach lighting control from the a-c. source normally and if the power fails the signal supply is automatically cut over the 12-volt storage battery used for the line control circuits. The lamps in the signals are rated at 12 volts 7.5 watt 6 c.p.

This installation of automatic signals was constructed by Pennsylvania Railroad signal forces, according to standard plans of the chief signal engineer, under the jurisdiction of the superintendent of telegraph and signals of the Eastern region and under the immediate direction of the supervisor telegraph and signals of the Philadelphia division with headquarters at Harrisburg, Pa. The field work was started in April, 1929, and the final section of signals was placed in service on November 4, 1929, a period of only seven months.

Development of the Multi-Pressure Locomotive

(Continued from page 332)

struction, as the shop men lack experience on this type of locomotive and must become acquainted with the various details which are different from those on the locomotives they have been maintaining. Many experimental changes are also continually in progress at present which are apt to be mistaken for regular maintenance. Boiler men, not acquainted with the new boilers, require more time to wash out the two systems than they will when thoroughly acquainted with this work.

The safety valves presented a difficult problem in that their dimensions were strictly limited and that they must operate under conditions of vibration and exposure not met with in stationary practice. The valves originally applied were not altogether successful. The valves on the closed circuit system gave trouble largely on account of the actual details of construction which has been overcome by rebuilding the valves in the railway shops by the use of a new form of seat and valve. The high-pressure safety valves also required a change in form of construction, but at present it appears that these difficulties are largely eliminated.

The check valves in the water-delivery line to the high-pressure boiler gave trouble on account of the very high concentrated load in the valve being almost impossible to maintain it in a tight condition for any length of time due to the pounding it received. The solution was a twin check valve with the proper capacity provided by two valves side by side in the same body, so that the total load on each valve of reduced diameter was little greater than the load on the single valve used in conventional practice.

Although over one year has elapsed since the locomotive was first put into service, the breaking in period on eastern lines, its transfer in knocked-down condition and re-assembly on the western lines and the various adjustments required while the locomotive was in regular operation on its assigned location on the mountain sub-division has not made it possible to give a complete summary of the operating performance of the locomotive over the entire period since the locomotive was built. The engine performance has been closely followed by observers and results show that a fuel saving of 14.8 per cent has been effected on this division under regular service conditions at slow speeds on 2.2 per cent grades between Albert Canyon, B. C., and Glacier, B. C., eastbound and Beavermouth, B. C., and Glacier westbound. Tests conducted on the eastern lines over the level Winchester sub-division between Montreal and Smith Falls, showed fuel economies of 25 per cent under higher speed and heavy tonnage.

Two of the tables show the performance of locomotive No. 8000 as compared with locomotives of the No. 5900 (T-1 class) on the heavy grades of the Mountain division, both east and west bound.

Odds and Ends . . .

"Travel and Grow Thin"

The Southern Pacific proudly claims the honor of introducing the latest innovation in train travel—a dietetic service on dining cars. What the new feature means, according to H. A. Butler, head of the Southern Pacific dining car department, is that persons requiring special diets are no longer barred from the pleasure of traveling in the West. Virtually any diet in common use can be prepared. Arrangements for the installation of the service were completed by the company after exhaustive study and consultation with the dietitians of its hospital department and of the Army Medical Corps.

For Future Generations

When the first Methodist Episcopal Church of Tahlequah, Okla., observed an anniversary recently, it provided a vault in which those interested were permitted to place messages, letters, pictures and other similar items. The vault was then sealed, and it will not be opened until June 12 in the year 2000. Included in the material sealed in the vault was a St. Louis-San Francisco timetable, which was placed therein by J. R. Parsons, agent of the Frisco at Tahlequah. We wonder if this timetable will look as funny to those who open the vault 68 years from now as early nineteenth century timetables look to us.

Railroads for a Song

The Denver & Rio Grande Western has notified the Colorado Public Utilities Commission that it will give its 39-mile branch between Saperino, Colo., and Lake City to any one who will operate it and pay the taxes, or the road will lease the branch for $480 a year and throw in the free use of a locomotive and coach.

The Hoopole, Yorktown & Tampico extending between Hoopole, Ill., and Tampico, a distance of 15 miles, is being offered by the county treasurer for back taxes. If the purchaser pays the taxes amounting to $239, he will receive the good will, stations, tracks, side-tracks, switches and turnouts.

The Origin of the Locomotive Whistle

Maybe this is an old story, but we have just come across an interesting narrative concerning the first locomotive whistle. It seems that it came into existence about 100 years ago as the result of an accident. The Stockton & Darlington, (England) the first passenger railway in the world (1825), originally employed a man on horseback to precede its train to warn people of its approach. Soon, however, trains were running 15 and more miles an hour and horses could not keep up with them. Consequently the mounted escort was discharged. Accidents and near-accidents occurred, but no action was taken until three years later when a train collided with a farmer's wagon which contained 50 pounds of butter and 80 dozen eggs. That started something. The directors of the railway called a meeting to decide what could be used as a warning signal to take the place of the man on horseback. Stephenson, who had designed the locomotives suggested a steam whistle. The directors welcomed the idea and engaged a maker of musical instruments to construct it. The first whistle was a trumpet or horn about 18 in. long and 6 in. across the bell, and had what has been described as a "weird and shrieking" tone.

More Commuter Cunning

NEW YORK.

TO THE EDITOR:

Referring to your article, "These Wily Commuters," appearing in the Odds and Ends page of the *Railway Age* of August 20:

During the past summer, I have had occasion to travel to Long Beach on the Long Island, and on several occasions I have noticed that sometimes, as a commuter gets off the train at destination, he hands his ticket to his son (or perhaps a friend who is not a commuter) who in turn boards the next outgoing train to New York, uses the ticket for a round trip, and then returns it to the rightful owner in time for use the next morning. This practice, I understand, is quite common, and undoubtedly results in quite a loss to the railroad.

I presume it is impossible to overcome entirely the various methods of defrauding the railroads by the misuse of commutation tickets, but I think that the New York Central plan, requiring the commuter's photograph to appear on the pass case which forms a part of the ticket, is one that tends to restrict the use of commutation tickets to those who are lawfully entitled to use them.

H. L. PETERSEN.

The Erie's Oldest Veteran

When the veteran employees of the Erie held a reunion at Conneaut Lake Park, near Meadville, Pa., recently, special honors were made to two of the old-timers. One of them was John Thomas, of Kent, Ohio, a retired car carpenter who, at 99 years of age, is the oldest veteran ever to attend an Erie reunion. The other was George Fordyce, engineman, of Susquehanna, Pa., who is 79 years old, has seen 62 years of service and is still on the job. President Charles E. Denney of the Erie presented gold watches to each of these veterans.

Historic Documents

Railway history in the Maritime provinces was recently recalled at Moncton, N. B., when the original construction plans of the European & North American Railway, which operated between St. John on the Bay of Fundy and Point du Chene on the Strait of Northumberland in New Brunswick, and which now forms part of the Atlantic region of the Canadian National, were sent to the provincial museum in St. John for exhibition there. Although the construction of the road was begun in 1853 and completed in 1860, the plans for some of the buildings, including the roundhouse and other structures in St. John, bear the date of 1838, showing the plans for the railway had been made even at that early time. The plans which are on heavy drawing paper, are water colored and show the old "U" type of rails in use at that time. The idea of the railway was in the public mind in New Brunswick earlier even than the date of the plans. A meeting of merchants and other inhabitants of St. Andrews was held in that town on October 5, 1835, at which steps were taken to organize a company to undertake the construction of a railroad from St. Andrews to the City of Quebec in Lower Canada.

These "Mystery" Excursions

The "mystery" excursions which the railways in various parts of the country have been offering this summer—in emulation of their British contemporaries—have done more than harvest quite a few stray dollars for the needy carriers. They have also resulted in a lot of new stories which have been sweeping across the country. One of the stories most frequently heard has to do with the unlucky excursionist who rode a "mystery" train of the Southern out of Washington, D. C., on a recent Sunday. The train took the crowd of excursionists to Frys Springs, Va., where a good time was had by all except by the individual referred to. It seems that he was a citizen of Frys Springs and was not particularly gratified to be taken on an excursion to his own home town. Furthermore, to make matters worse, he had to ride the excursion train back to Washington in order to get his automobile, in which he had driven from Frys Springs to Washington early in the morning. Oddly, enough, an identical story is being circulated concerning one of the "mystery" excursions of the Chicago & North Western, which took a crowd of expectant travelers to Lake Geneva, Wis. In this case, two of the passengers were residents of Lake Geneva who had driven into Chicago and left their car just in time to be taken back by train to the point from which they had started. The similarity of these two stories is striking, and is inclined to make one believe either that unusual coincidences do occasionally happen or that the publicity department of the North Western is wide awake to its opportunities.

NEWS

Candidates Requested to Discuss Transport

President Hoover and Governor Roosevelt called upon for statement of policies

Detailed statements of their plans for dealing with transportation and marketing problems have been requested of the Republican and Democratic presidential candidates by Robert F. Blair, of Cleveland, O., president of the National League of Commission Merchants, who asks President Hoover and Governor Roosevelt to discuss the national policies on agriculture and transportation "in a way that will leave no doubt as to the candidate's program for dealing with them." In two letters, practically identical in text, made available at the Washington office of the league, Mr. Blair expresses dissatisfaction with the present agricultural policy as incorporated in the Agricultural Marketing Act, and points out some phases of the transportation problem which should be dealt with.

Encouragement for railroad consolidation, a more liberal attitude in regulation, and the establishment of a department of transportation under the direction of a Secretary of Transport who would be a member of the president's cabinet, are among the suggestions made. Into the new department of transportation would be gathered all transportation matters, including those incident to rail, water, air, motor truck, and pipe line. The following comment on the railroad situation appears in the letters to both candidates:

"Every reasonable encouragement of the consolidation movement, we believe, meets general approval. Even those who believe government ownership ultimately will be forced on the country realize that further consolidation of rail facilities would not complicate in any way the transition from private to government control, should conditions appear to make the latter desirable. It is suggested in the general revision of laws and policies affecting the railroads that repeal of Section 15-a of the Transportation Act would be desirable. Many circumstances suggest the wisdom of permitting railroads, under proper safeguards, to engage in forms of transportation other than by rail where public necessity and convenience would be served. That the rail carriers should be permitted more discretion in abandoning unprofitable lines and facilities, also appears justified by the experiences of recent years in which the motor truck has become a recognized transportation factor. Any revision of laws and policies, to be helpful and effective, must deal with the abuses incident to the holding company and the systematic diversion of revenues from the main channel upon which railway operation depends. Emancipation of the railroads from banker control and domination also is needed. Sweeping reforms in the composition of the financial structures of many rail systems has been too long delayed. Dead and abandoned property ought not to be carried in the investment account on which the public is required, through current transportation charges, to pay returns."

Off-Track Station Found Justified

The Interstate Commerce Commission has issued a report finding justified the proposal of the New York, Chicago & St. Louis to establish an additional off-track station in St. Louis, Mo., in connection with the Slay Motor Service, Inc., and has vacated the order of suspension which had been issued after protests filed by practically all other carriers serving St. Louis or East St. Louis.

Freight Commodity Statistics

The number of tons of revenue freight carried by Class I railways in the first quarter of this year was 300,150,198, as compared with 396,029,424 in the corresponding quarter of last year, according to the freight commodity statistics compiled by the Bureau of Statistics of the Interstate Commerce Commission. The tonnage of freight originated was 161,698,288, as compared with 213,989,113 in the corresponding period of 1931.

Week-End Excursion Fares To Be Continued

The low week-end excursion fares at one and one-tenth the regular one-way rates, which have been offerd this Spring and Summer by railroads in Trunk Line and Central Passenger Association territories, will be continued beyond September 3, the date on which original plans called for expiration of the tariffs. The extension is characterized as "an effort to stimulate further week-end travel" on these tickets which are sold, with certain local exceptions, between all stations in the territories involved.

The tickets are good for outbound journeys from noon Friday to midnight Saturday and for return trips on trains leaving up to and including midnight the following Monday. They are honored in Pullman cars on payment of the regular Pullman charges. The announcement of the extension listed the participating railroads as follows: New York Central; Pennsylvania; Baltimore & Ohio; Erie; Delaware, Lackawanna & Western; Central of New Jersey; Lehigh Valley; Reading; and West Shore.

Cotton Rates Reduced To Meet Competition

Cuts up to 50 per cent become effective as I. C. C. fails to suspend tariffs

Reductions ranging up to 50 per cent in railroad freight rates on cotton, made to meet the increasing competition of unregulated truck and barge transportation become effective as of August 27 and September 6, as the result of the decision of Division 2 of the Interstate Commerce Commission announced on August 24 not to exercise its authority to suspend the proposed rates. The tariffs which had been filed to become effective on August 27 apply to shipments from points in Arkansas, Oklahoma, Louisiana, and Tennessee to Gulf ports, principally to New Orleans; while other tariffs, filed to become effective on September 6, apply from southwestern points to destinations in southern and official territories and Canada, and between Mississippi Valley and southeastern points.

This announcement followed an informal conference which lasted several days called by the commission so that a decision as to whether the rates should be suspended could be reached before the opening of the cotton-shipping season. Many protests against the rates proposed by the roads were made. In announcing the decision not to suspend the commission said that its action in thus permitting the protested schedules to become effective without prior investigation "does not constitute approval thereof, all such schedules being subject to investigation upon formal complaint."

In an effort to compete with the combination truck-barge transportation the southwestern lines had worked out a new plan of cotton tariffs designed to enable them to transport cotton under such operating conditions as would enable them to publish very low rates.

To this end, whereas cotton has heretofore been handled on an any-quantity basis with carrier's privilege of compression in transit, rates were proposed on the basis of varying minimum weights per car with uniform differentials so that the rate for a 65,000-lb. carload is 20 cents per 100 lb. less than that for a 25,000-lb. car, the rate for a 50,000-lb. car is 15 cents less, and the rate for a 35,000-lb car is 9 cents less. On this basis rates were published as low as 25 cents per 100 lb. from Memphis, Tenn., and Little Rock. Ark., to New Orleans on the 65,000-lb. minimum,

which would require compressing, while the rate for a 25,000-lb. car would be 45 cents for the same distance. Extensive cost studies were made which showed that the lower rates for heavy carloads would be justified by the saving in operating expenses incident to the rehandling which was required under the former plan.

The principal protests were made by representatives of the port compress interests on the ground that they would be put at a disadvantage as compared with the interior compressors.

Unions Oppose Rail Mergers

A program of opposition to further railroad consolidations until Congress enacts legislation protecting labor from resulting unemployment was decided upon by the Railway Labor Executives' Association at Cleveland, Ohio, on August 24. It was also decided to seek early action by Congress on the Pittman-Crosser six-hour bill designed to give employment to unemployed rail workers and to increase employment. The association also agreed to make known before the election in November, the position of every aspirant for public office for or against a labor prosperity program.

Eastern Presidents Appoint Wage Committee

The Eastern Presidents' Conference, at a meeting in New York on August 30, appointed a committee "to co-operate with committees of the Western and Southeastern regions in giving consideration to the matter of railway wages for the period following February 1, 1933," on which date the present agreement, whereby organized railway workers voluntarily accepted a 10 per cent deduction in pay for one year, expires.

Members of the Eastern committee are: John G. Walber, vice-president—personnel, New York Central; C. W. Galloway, vice-president—operation, Baltimore & Ohio; and H. A. Enochs, acting chief of personnel, Pennsylvania.

Ship With Us—Shop With You

"You Ship With Us—We Shop With You" is the keynote of a campaign being conducted by the wives, daughters and friends of railway officers and employees at Jackson, Tenn., who have formed themselves into a committee to call on shippers and receivers of freight and persuade them to give preference to railroad service. Following results at Jackson, several women's organizations are being formed at Cairo, Ill., Meridian, Miss., and Tuscaloosa and Montgomery, Ala. At Jackson, which is practically dependent upon its four railroads, over 200 merchants, wholesale companies and grocers have signed the following pledge:

"We believe it is vitally necessary for the merchants to patronize the railroads as far as possible and for the local consumers to patronize the home merchants; and in order to accomplish this purpose, we agree to receive and forward all freight and express by railroad as far as possible."

A copy of the agreement and a list of the names of the companies subscribing to it are published in the daily newspapers of that city.

Distribution of Railroad Wages

Thirteen railroads serving the trade area within a radius of 50 miles of Peoria, Ill., and Pekin, have an annual payroll in that district of more than $19,000,000, of which $4,774,183, or 25 per cent, is spent for groceries, fruits, vegetables, etc., while $5,729,019, or 30 per cent, goes into investments, savings, professional services and similar channels, according to a tabulation compiled by the Peoria-Pekin Railroads' Traffic Association. Eight per cent of the total payroll is spent for clothing and department store goods, while five per cent goes for gasoline and oil and another five per cent for meat and sea foods. The remainder of the payroll is spent for various items in percentages ranging from one-half to three.

First Electrification Discontinued

Electric operation of the Nantasket Beach branch of the New York, New Haven & Hartford, the first application of electrification to a steam railroad in the United States, was discontinued on July 25, and replaced with gasoline-electric service. The line was originally about seven miles long, with two tracks between Nantasket Junction and Pemberton, Mass., but was recently shortened to about six miles and operated single track. The line was built largely for Summer passenger service, and was electrified in 1895. The contact system consisted of a 600-volt, direct-suspension trolley using a figure 8 section contact wire. The original trains were made up into a motor car and three or four trailers, but shortly before the electric operation was discontinued the normal trains consisted of single cars or single cars hauling a trailer.

N. & W. Employees to Hold System Meeting

The thirteenth annual system efficiency meeting of the employees of the Norfolk & Western will be held at Portsmouth, Ohio, on October 7.

An elaborate telephone hook-up, which will center in the Portsmouth High School Auditorium and which will embrace the entire system, will carry the proceedings of the evening session to the thousands of N. & W. employees. Local efficiency clubs in 22 towns on the railroad, included in the hook-up, will meet simultaneously to receive the broadcast. The public is invited to attend the night meeting at Portsmouth and at the other places on the line. In addition to the night session, morning and afternoon sessions will be held in the auditorium of the new Norfolk and Western Portsmouth passenger station.

While the detailed program has not yet been completed, the evening meeting is expected to be featured with addresses by several noted speakers. Among the principal topics which will be dealt with at the convention, are: "First, the all important matter of better service; second, the loss of business to other forms of transportation; third, the importance of every employee actively developing business for his road; and fourth, the necessity of taking a more active part in the selection, and election, of men to public office—not only men who will deal fairly with the railroads, but men who will bring about greater efficiency and greater economy in the conduct of our government."

The C. P. R. in July

The statement of earnings and expenses of the Canadian Pacific for July, shows net for that month at $859,708, as against $1,733,232 in the corresponding month of last year, a decrease of $873,523. Gross revenues at $9,669,343 showed a decrease of $2,514,052 from the gross for July of last year, with this decrease substantially reduced through a further cut by the road in operating expenses, which for the month of July of this year amounted to $8,809,634, against $10,450,163 in July of last year, a decrease of $1,640,528.

For the seven months of the fiscal year ended with July, net revenues of the road amounted to $6,111,587, contrasting with $8,539,591 in the corresponding period of last year, a decrease of $2,428,003. Gross showed a decrease of $16,779,089 from the same period of last year, while expenses at $61,603,054 showed a decrease of $14,351,085 by the same comparison.

C. N. R. Net Up In July

Reductions in expenses during the month of July more than offset the decrease in gross revenues by the Canadian National and provided an operating ratio for the month of 93.51 per cent, as against 97.73 per cent in July of last year, according to the official statement of earnings. The Canadian National had, for the month of July, 1932, gross revenues of $11,602,457, a decrease of $3,205,017, or 21.64 per cent, as compared with July, 1931. Operating expenses for July, 1932, were $10,849,023, a decrease of $3,622,832, or 25.03 per cent. The net revenue from railway operations in July amounted to $753,433, as against $335,618 in July, 1931, an increase of $417,815.

The following is the summary of the results of operations for the seven months of 1932 as compared with 1931:

	1932	1931 New York.
Operating revenue	$81,790,275	$103,083,100
Operating expenses	78,628,167	101,418,446
Net revenue	$3,162,107	$1,664,653
Operating ratio, per cent	96.13	98.09

I. C. C. Objects to Propaganda On Tariffs

The Interstate Commerce Commission has objections to the use of the unused white space which frequently appears on the last page of railway tariff publications as a vehicle for the publication of ideas which railway men would

like to have placed before shippers. F. L. Speiden, tariff-publishing agent of the southern lines has recently adopted the plan of making such use of this blank space; but Division 2 of the commission on August 27 issued an order directing the cancellation of such a tariff on the ground that "page 4 of said schedule contains extraneous matter which has no bearing whatever upon the rates, rules, regulations and practices contained therein" and ordering the filing of a supplement including all matter contained therein except that shown on page 4. The extraneous matter consisted of an extract from an editorial from the Traffic World on motor competition and a quotation from a statement by L. A. Downs, president of the Illinois Central, on the cost of railway valuation.

Freight Delays at Chicago Reduced

A reduction in delay to cars passing through Chicago was accomplished in July following consideration, by the Mechanical and Freight Claim divisions of the American Railway Association, of the proposed modification of the freight claim rules to provide for prorating on a mileage basis the burden of claims caused by delay to repair owners' defects in cars.

The matter was first considered at a joint conference of Mechanical and Freight Claim division representatives on June 2, and later at the annual meeting of the Freight Claim division on June 8. In July fewer cars were rejected because of defects and more repairs to cars were made without putting the cars on the repair track. In addition, the average delay per car on the repair track was reduced. The record of cars delayed for repairs since December, 1930, is as follows:

CARS DELAYED FOR REPAIRS

December, 1930	one of each 111 cars delivered
Jan. to Dec., 1931	one of each 289 cars delivered
January, 1932	one of each 454 cars delivered
February, 1932	one of each 567 cars delivered
March, 1932	one of each 461 cars delivered
April, 1932	one of each 693 cars delivered
May, 1932	one of each 478 cars delivered
June, 1932	one of each 735 cars delivered
July, 1932	one of each 547 cars delivered

Prizes For Ideas On the B. & M.

The Boston & Maine, according to a recent announcement plans to award to employees $75 in prizes every other month for suggestions and acts outside of regular duties which result in a profit—"net money"—for the railroad. There will be a first prize of $25, two prizes of $15, and two of $10. This arrangement was begun on August 15. Any employee below the rank of superintendent is eligible, but the suggestion must be concerning matters wholly outside the regular duties of the employee. Any suggestion that results in a better method of doing work; in new business secured; suggestions for new business; suggestions or activities that result in saving money, will make the employee eligible.

This contest is in addition to the regular suggestion plan which has been in vogue on this road since January 1, 1930, and in which employees already have been awarded over three thousand dollars.

The circular emphasizes the eligibility of every employee; an office boy might secure a prize for noticing faulty equipment on a train.

Participation in the new scheme will not eliminate an individual from consideration under the regular suggestion plan, under which employees have received cash payments as high as $183. The opportunity to give tips which will result in new freight or passenger business constitutes a field which, says the circular, is almost limitless.

I. C. C. To Hold Hearings On Terminal Switching

In connection with its investigation of terminal services as part of the general investigation in Ex Parte No. 104, the Interstate Commerce Commission has assigned a series of hearings at Chicago from September 20 to 30 at which representatives of approximately 75 large industrial companies and of connecting railroads are requested to appear and have available witnesses who, from their knowledge of operations on the industrial plant tracks serving the respective industries, can testify to physical facts relating to the performance of terminal switching services. The hearings will be held before Director W. P. Bartel of the Bureau of Service. In the notice of the assignment the commission says that two questions are presented concerning terminal switching services performed on industrial tracks in moving freight between industries located on such tracks and the rails of the carriers, as to whether they are services which the connecting common carriers are, by law, duty-bound to perform, and whether, where such services are performed by industries, any allowances made to the industries by connecting common carriers as compensation for such services, are lawful; also why, in similar circumstances, no allowances are made to other industries for performing such services. The witnesses are expected to testify as to the basis and justification for any allowances or compensation which may be received by such industries and to any other facts that may have a material bearing in the determination of the questions.

U. S. Crippling Express Companies

An attack upon Postmaster General Walter Brown for the methods employed by the postoffice department in an attempt to force out all competition in the handling of parcel post service, at a tremendous cost to the taxpayers of the United States, developed in the Shannon Congressional committee hearing at South Bend, Ind., on August 24 in the testimony of E. L. Oliver, research director of the Brotherhood of Railway and Steamship Clerks. He charged that if the parcel post operations were indulged in by private concerns, they would be criminal, under existing laws. Hints were also made of a movement seeking the removal of Postmaster General Brown for violation of the federal trade commission's rules under the criminal practices act. Unless, said Mr. Oliver, a halt is called in the government's parcel post activities, the nation's large express companies will be forced out of business. He alleged discriminatory practices in establishing rates between zones on parcel post, while the express companies are regulated by the government in regard to rates and service. The practices, he said, directly violate the criminal practices act in that they unfairly force out competition. He said that parcel post losses incurred by the government in 1926 amounted to $2,959,733; in 1927, to $4,479,586; in 1929 to $19,778,707; in 1930, to $15,570,731; and in 1931, to $20,031,600.

He demanded that the parcel post system live up to the law, enacted in 1912, which requires the postmaster general to modify rates and regulations to insure the receipt of revenue from the service adequate to pay the cost thereof.

Successful Excursions in Middle West

Despite a rainy morning, more than 6,000 persons took advantage of an excursion offered by the Chicago & North Western from points in Wisconsin, Illinois and Iowa to Chicago on August 28. Of these, more than 3,200 were carried on five special trains from Milwaukee to attend Milwaukee day at the Cubs' baseball park. The rates from the various points were about one-half cent a mile.

On the same day, the Chicago, Milwaukee, St. Paul & Pacific ran a $1 excursion to Milwaukee and return, and carried more than 2,000 persons. More than 1,200 were carried into Chicago from other Wisconsin points.

Excursions run by the pooled service of three railroads, the Northern Pacific, the Great Northern and the Minneapolis, St. Paul & Sault Ste. Marie, in both directions between St. Paul-Minneapolis, and Duluth-Superior, on August 21 resulted in a movement of more than 6,000 persons. The fare was $1.50 for the round trip of 310 miles.

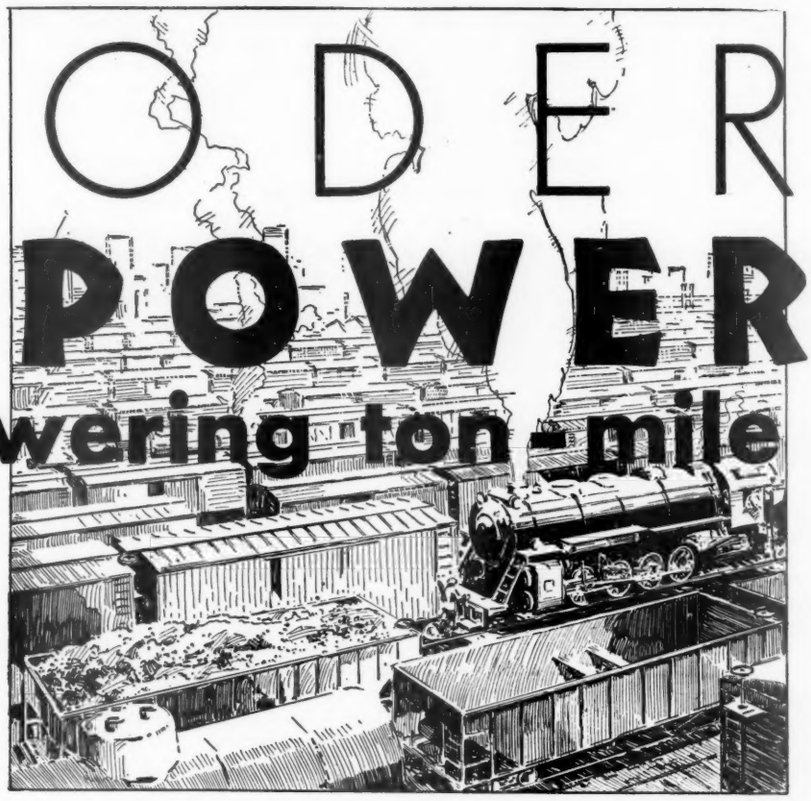
A total of 6,631 passengers took advantage of $1 excursion fares offered by the St. Louis-San Francisco on the week-end of August 27. They were carried on eight special trains in 110 passenger cars. The heaviest movement was from Northeastern Arkansas and Southeastern Missouri to St. Louis, a total of 3,866 passengers. Special trains also carried 352 passengers from Oklahoma City, Okla., and intermediate points to Tulsa; 940 from Tulsa and intermediate points to Sulphur; 878 from Ashdown, Ark., to Sulphur; 367 from Pittsburg, Kan., and Joplin, Mo., to Tulsa; and 228 from Enid, Okla., and intermediate points to Tulsa.

Seal Record Simplified

In an effort to economize in the keeping of seal records and at the same time reduce the complications prevailing because of duplication of effort, railroads in the Chicago territory, through a joint committee consisting of representatives of the Chicago Claim Conference, the Chicago Railway Spe-

Continued on next left-hand page

MODERN POWER is lowering ton-mile costs



Whether there are only a few cars moving or whether the yards are choked with freight—modern power reduces costs per ton-mile.

The efficiency of modern locomotives has never been so gratefully appreciated as today when a dollar counts more than ever before.

With the return of normal business, the necessity of maintaining the maximum net will prohibit the introduction of the older and less efficient locomotives into a schedule of operation adjusted to the use of highly efficient motive power.

Do not let the old locomotives waste any increasing gross. Buy new power of maximum efficiency, aided thereto by Franklin devices.

FRANKLIN RAILWAY SUPPLY CO., INC.

NEW YORK CHICAGO MONTREAL

cial Agents' and Police Association, the Interchange Committee of the Chicago Car Interchange Bureau and the Committee on Co-Ordination of Chicago Terminals, have agreed upon a plan whereby the same records will not be kept by all railroads. The agreement for keeping records is as follows:

1. The number and symbol of all seals at side and end openings of all loaded cars shall be recorded at points of (a) loading, (b) transfer from car to car and (c) destination.

2. (a) In the interchange between carriers, the number and symbol of all seals at side openings shall be recorded by the receiving carrier at the time and place of interchange, which record shall be considered that of delivering and receiving carriers.

(b) Should the delivering carrier elect to take and preserve a seal record at the time and place of interchange, such record shall be recognized.

(c) Failure of the receiving carrier to take and preserve seal records in the manner outlined shall relieve the delivering carrier from responsibility for loss chargeable to such defective seal records.

(d) Any carrier electing to use negative seal records does so at its own risk.

(e) Where freight is interchanged, the carriers involved shall, on the basis of economy and convenience, decide among themselves what shall be the point of interchange for seal record purposes.

While the plan is being developed in Chicago, it is expected that it will be adopted by railroads throughout the country.

Use of Mixed Trains Sought In Carolinas

The Carolina & Northwestern, operated by the Southern, has appealed to the Court of Common Pleas at Columbia, S. C., from an order of the South Carolina Railroad Commission which denies a petition to discontinue certain passenger trains between Gastonia, N. C., on the state line and Chester, S. C., and to substitute mixed freight and passenger trains. It was alleged by the railroad that in the year 1931 the direct cost of operation, exclusive of interest, depreciation and similar items, exceeded the income from these trains by $16,000 and that up to May of this year the revenue was 20 per cent less than it was in 1931.

The commission, in denying the petition, was of the opinion that, notwithstanding the alleged loss (by the operation south of Gastonia), in view of its freight receipts and the fact that the discontinuance of the trains "practically isolates the community" and deprives it of all passenger railway service for a distance of 45 miles, it is the duty of the railway company to maintain the trains.

"It is doubtful," the report continued, "if there is a passenger train operating in the state now making expenses, but that does not mean that there is no longer any demand for passenger train service, and as long as a railroad occupying the important connections in the transportation system of the state which this applicant occupies is continuing to function as a railroad it ought, when there is a substantial demand for it, to be required to furnish more passenger train service than is afforded by a mixed train."

In its appeal, the railroad alleged that the number of passengers on this line decreased from 211,683 in 1920 to 11,659 in 1931, and that the total passenger revenue for those years decreased from $136,666 to $8,934.

The North Carolina Corporation Commission has overruled exceptions filed by the Atlantic & Yadkin to an order of the commission denying a petition to discontinue its passenger trains between Mount Airy and Sanford. The commission's order stated that although the railway is losing nearly $35,000 a year in the operation of its passenger trains and

(Continued on page 345)

Net Income, Class I Railways—June and Six Months

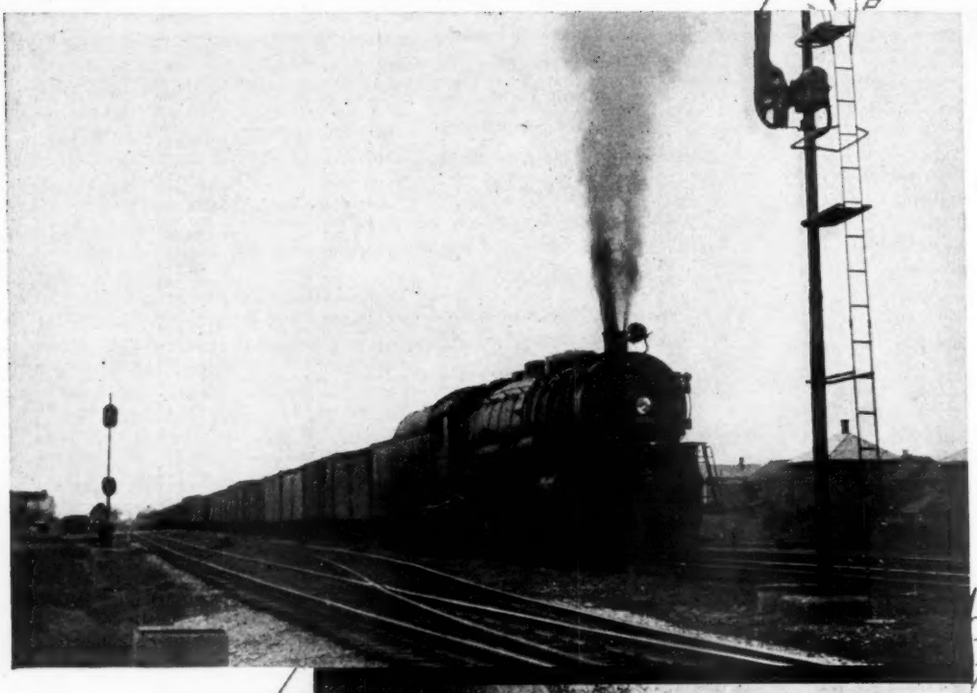
		Net Income 1932	Net Income 1931
Akron, Canton & Youngstown	June	$15,992	— $2,906
	6 mos.	1,491	22,173
Alton	June	— 172,206	— 351,876
	6 mos.	— 861,284	— 2,044,293
Alton & Southern	June	24,429	22,646
	6 mos.	99,263	120,446
Atchison, Topeka & Santa Fe	June	— 284,057	940,847
	6 mos.	— 1,927,797	3,015,558
Gulf, Colorado & Santa Fe	June	Included in A. T. & S. F.	
	6 mos.	Included in A. T. & S. F.	
Panhandle & Santa Fe	June	Included in A. T. & S. F.	
	6 mos.	Included in A. T. & S. F.	
Atlanta & West Point	June	— 28,252	10,238
	6 mos.	— 141,645	— 8,446
Western of Alabama	June	— 25,033	— 4,995
	6 mos.	— 119,137	47,164
Atlanta, Birmingham & Coast	June	— 94,468	— 105,516
	6 mos.	— 432,984	— 501,773
Atlantic Coast Line	June	— 994,032	1,292,163
	6 mos.	— 2,027,800	5,112,565
Charleston & Western Carolina	June	— 21,570	51,726
	6 mos.	— 47,635	110,348
Baltimore & Ohio	June	— 34,884	1,298,208
	6 mos.	— 4,752,299	9,147
Baltimore & Ohio Chic. Term.	June	.....	.....
	6 mos.	.....	.....
Staten Island Rapid Transit	June	.....	.....
	6 mos.	.....	.....
Bangor & Aroostook	June	— 11,311	— 161,283
	6 mos.	1,081,745	768,628
Belt Ry. Co. of Chicago	June	— 55,703	— 39,703
	6 mos.	— 332,069	— 80,965
Bessemer & Lake Erie	June	1,863	511,115
	6 mos.	— 868,306	— 144,758
Boston & Maine	June	36,219	377,715
	6 mos.	278,946	1,821,307
Brooklyn Eastern Dist. Term.	June	— 12,612	778
	6 mos.	— 56,737	24,607
Burlington-Rock Island	June	— 82,904	— 86,748
	6 mos.	— 473,838	— 616,914
Cambria & Indiana	June	39,685	66,430
	6 mos.	380,636	460,203
Canadian Pacific Lines in Maine	June	.....	.....
	6 mos.	.....	.....
Canadian Pacific Lines in Vermont	June	.....	.....
	6 mos.	.....	.....
Central of Georgia	June	— 305,075	— 72,439
	6 mos.	— 1,532,645	— 160,729
Central New Jersey	June	— 426,328	— 125,728
	6 mos.	— 720,752	196,141
Central Vermont	June	— 76,922	— 160,222
	6 mos.	— 536,575	— 279,293
Chesapeake & Ohio	June	1,017,961	2,788,787
	6 mos.	8,797,037	11,867,150
Chicago & Eastern Illinois	June	— 359,710	— 324,717
	6 mos.	— 1,945,699	— 1,907,429
Chicago & Illinois Midland	June	— 129,238	— 36,225
	6 mos.	— 205,186	— 173,718
Chicago & North Western	June	— 1,183,620	61,521
	6 mos.	— 7,154,009	— 2,859,179
Chicago, Burlington & Quincy	June	— 192,593	693,719
	6 mos.	409,131	6,660,247
Chicago Great Western	June	— 125,980	45,617
	6 mos.	— 406,139	412,345
Chicago, Indianapolis & Louisville	June	— 199,657	— 65,528
	6 mos.	— 1,063,417	— 518,073
Chicago, Mil., St. Paul & Pacific	June	— 3,272,962	— 1,112,086
	6 mos.	—14,158,179	— 8,636,076
Chicago River & Indiana	June	6,868	42,137
	6 mos.	135,013	350,321
Chicago, Rock Island & Pacific	June	— 630,000	531,966
	6 mos.	— 4,984,335	— 88,786
Chicago, Rock Island & Gulf	June	— 198,645	— 166,759
	6 mos.	— 400,274	— 85,915
Chic., St. Paul, Minn. & Omaha	June	— 240,754	— 115,714
	6 mos.	— 1,888,802	— 1,423,723
Clinchfield R. R.	June	— 226,949	— 115,083
	6 mos.	— 909,978	— 415,842
Colorado & Southern	June	— 126,590	833,671
	6 mos.	— 889,567	333,807
Ft. Worth & Denver City	June	— 3,794	— 56,617
	6 mos.	— 276	7,873
Columbus & Greenville	June	— 3,699	8,295
	6 mos.	— 15,726	56,243
Conemaugh & Black Lick	June	— 20,750	— 14,509
	6 mos.	— 123,806	— 146,202
Delaware & Hudson	June	— 656,140	— 21,692
	6 mos.	— 2,302,239	— 658,978
Delaware, Lackawanna & Western	June	— 610,853	233,103
	6 mos.	— 1,342,806	943,370
Denver & Rio Grande Western	June	— 523,882	— 192,441
	6 mos.	— 2,559,945	— 851,488
Denver & Salt Lake	June	— 17,467	— 22,709
	6 mos.	31,953	— 33,971
Detroit & Mackinac	June	— 4,084	14,689
	6 mos.	— 62,706	34,507
Detroit & Toledo Shore Line	June	— 23,438	9,593
	6 mos.	135,217	248,390
Detroit Terminal	June	— 12,242	— 8,719
	6 mos.	— 18,023	47,608
Detroit, Toledo & Ironton	June	33,191	— 15,859
	6 mos.	— 33,445	238,841
Duluth, Missabe & Northern	June	— 153,431	926,240
	6 mos.	— 2,571,891	— 2,311,306
Duluth, Winnipeg & Pacific	June	— 55,371	— 90,180
	6 mos.	— 242,585	— 383,682
Elgin, Joliet & Eastern	June	— 241,925	65,133
	6 mos.	— 1,220,249	— 155,222
Erie Railroad	June	— 666,449	— 195,418
	6 mos.	— 2,763,298	— 66,203
Chicago & Erie	June	.....	.....
	6 mos.	.....	.....

Net Income, Class I Railways—June and Six Months (Continued)

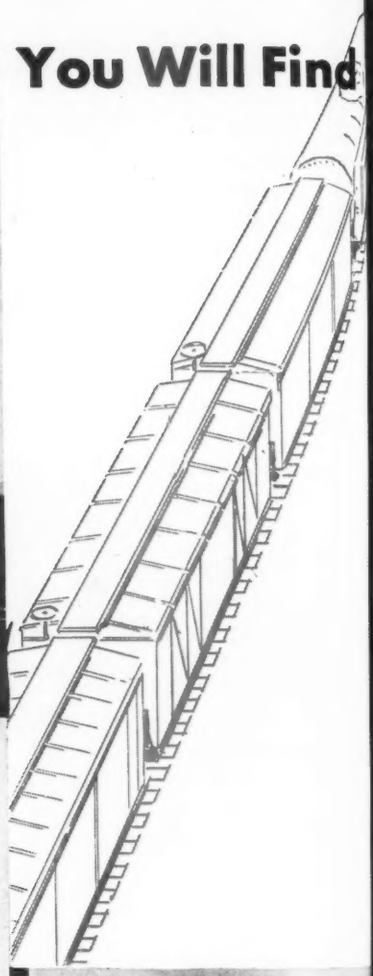
		Net Income 1932	Net Income 1931
New Jersey & New York	June	— 26,506	— 19,517
	6 mos.	— 146,556	— 111,327
N. Y., Susquehanna & Western	June	— 54,878	— 57,664
	6 mos.	— 190,352	23,222
Florida East Coast	June	— 531,660	— 379,989
	6 mos.	— 1,031,627	— 303,823
Fort Smith & Western	June	— 25,470	— 30,100
	6 mos.	— 116,546	— 117,398
Galveston Wharf	June	— 6,501	4,752
	6 mos.	109,056	9,718
Georgia R. R.	June	— 56,572	12,958
	6 mos.	— 287,167	— 36,820
Georgia & Florida	June	— 60,668	— 61,106
	6 mos.	— 415,342	— 341,237
Grand Trunk Western	June	— 547,725	— 235,256
	6 mos.	— 2,573,208	— 1,362,472
Canadian National in New England	June	— 87,999	— 184,093
	6 mos.	— 736,683	— 883,995
Great Northern	June	711,244	34,583
	6 mos.	— 8,891,219	— 2,063,693
Green Bay & Western	June	10,685	11,349
	6 mos.	14,006	— 35,748
Gulf & Ship Island	June	— 42,153	— 59,219
	6 mos.	— 176,768	— 354,968
Gulf, Mobile & Northern	June	— 60,055	— 63,540
	6 mos.	— 312,004	— 200,343
Illinois Central	June	— 895,927	326,693
	6 mos.	— 2,023,759	— 2,091,072
Yazoo & Mississippi Central	June	— 233,196	— 337,289
	6 mos.	— 1,410,977	— 2,070,429
Illinois Central System	June	Not reported	
	6 mos.	Not reported	
Illinois Terminal	June	— 36,856	80,716
	6 mos.	— 185,926	320,018
Kansas City Southern	June	— 152,390	42,127
	6 mos.	— 734,653	299,278
Texarkana & Ft. Smith	June	.....	17,113
	6 mos.	.....	137,241
Kansas, Oklahoma & Gulf	June	2,219	56,729
	6 mos.	105,527	244,711
Lake Superior & Ishpeming	June	— 33,753	67,868
	6 mos.	— 228,931	— 109,790
Lake Terminal	June	9,241	18,381
	6 mos.	— 17,956	— 16,247
Lehigh & Hudson River	June	2,059	5,647
	6 mos.	58,477	126,333
Lehigh & New England	June	— 1,259	14,052
	6 mos.	134,454	221,493
Lehigh Valley	June	— 608,944	— 128,690
	6 mos.	— 1,964,307	— 626,944
Louisiana & Arkansas	June	— 10,724	91,053
	6 mos.	— 69,714	170,893
Louisiana, Arkansas & Texas	June	— 12,055	— 15,739
	6 mos.	— 81,117	— 88,622
Louisville & Nashville	June	— 795,074	101,778
	6 mos.	— 3,827,618	715,044
Maine Central	June	51,587	4,835
	6 mos.	— 196,927	39,546
Midland Valley	June	4,355	44,658
	6 mos.	— 12,682	17,355
Minneapolis & St. Louis	June	— 387,448	— 171,252
	6 mos.	— 1,974,680	— 1,161,635
Minneapolis, St. Paul & S. S. Marie	June	— 490,068	— 255,734
	6 mos.	— 3,526,721	— 2,051,593
Duluth, South Shore & Atlantic	June	— 105,109	— 135,161
	6 mos.	— 619,856	— 535,439
Spokane International	June	— 32,157	— 13,665
	6 mos.	— 216,849	— 115,306
Mississippi Central	June	— 14,152	2,547
	6 mos.	— 126,909	— 28,561
Missouri & North Arkansas	June	— 39,258	— 40,133
	6 mos.	— 209,542	— 152,983
Missouri-Illinois	June	— 8,496	7,831
	6 mos.	— 68,419	— 23,496
Missouri-Kansas-Texas Lines	June	— 122,026	— 271,946
	6 mos.	— 1,209,011	— 1,018,517
Missouri Pacific	June	— 1,034,956	150,160
	6 mos.	— 5,951,736	971,177
Gulf Coast Lines	June	.....	.....
	6 mos.	.....	.....
International-Great Northern	June	— 113,295	292,843
	6 mos.	— 928,401	490,752
San Antonio, Uvalde & Gulf	June	— 20,449	— 44,239
	6 mos.	— 97,632	— 111,921
Mobile & Ohio	June	— 229,104	— 216,634
	6 mos.	— 1,210,034	— 801,436
Monongahela	June	21,221	58,856
	6 mos.	118,298	191,530
Monongahela Connecting	June	— 28,580	9,062
	6 mos.	— 168,700	— 26,781
Montour	June	12,257	51,633
	6 mos.	259,978	365,918
Nash., Chatt. & St. Louis	June	— 80,894	— 106,906
	6 mos.	— 486,087	— 130,424
Nevada Northern	June	1,673	8,936
	6 mos.	— 5,575	50,918
Newburgh & South Shore	June	— 17,959	— 1,426
	6 mos.	— 92,548	— 69,739
New Orleans Great Northern	June	— 51,835	13,110
	6 mos.	— 210,754	— 30,394
New Orleans Terminal	June	— 7,968	26,846
	6 mos.	— 64,941	— 127,468
New York Central	June	— 3,068,025	942,214
	6 mos.	—11,051,149	4,517,297
Indiana Harbor Belt	June	59,767	92,636
	6 mos.	407,907	570,551
Pittsburgh & Lake Erie	June	119,087	269,040
	6 mos.	593,996	1,615,264
New York, Chicago & St. Louis	June	— 504,963	37,234
	6 mos.	— 2,501,930	1,038,584
N. Y., New Haven & Hartford	June	— 179,216	800,598
	6 mos.	998,785	5,118,840
New York Connecting	June	— 78,384	— 58,093
	6 mos.	— 255,586	— 251,724
New York, Ontario & Western	June	1,820	96,654
	6 mos.	365,283	165,013
Norfolk & Western	June	1,090,055	2,254,082
	6 mos.	5,492,699	9,208,507
Norfolk Southern	June	57,160	137,520
	6 mos.	— 563,553	— 168,190
Northern Pacific	June	— 1,003,796	329,880
	6 mos.	— 4,782,089	— 885,017
Northwestern Pacific	June	— 137,540	— 115,632
	6 mos.	— 955,181	— 1,177,635
Oklahoma City-Ada-Atoka	June	— 19,332	9,338
	6 mos.	— 59,249	— 30,280
Pennsylvania R. R.	June	1,132,482	2,046,673
	6 mos.	5,528,596	8,155,498
Long Island	June	267,950	817,386
	6 mos.	1,128,361	2,507,373
Peoria & Pekin Union	June	— 8,425	— 4,342
	6 mos.	40,568	49,079
Pere Marquette	June	— 280,654	— 104,148
	6 mos.	— 1,487,898	— 751,674
Pittsburg & Shawmut	June	— 15,098	— 2,668
	6 mos.	— 119,544	— 26,641
Pittsburg, & West Virginia	June	— 83,953	— 139,702
	6 mos.	— 379,394	164,566
Pittsburg, Shawmut & Northern	June	— 24,753	— 2,468
	6 mos.	— 62,233	48,486
Reading	June	89,035	— 307,678
	6 mos.	938,102	365,481
Atlantic City	June	— 61,307	— 19,731
	6 mos.	— 540,238	— 600,691
Richmond, Fredericksb'g & Potomac	June	31,412	95,388
	6 mos.	264,839	928,284
Rutland	June	235	— 7,997
	6 mos.	— 15,514	— 94,420
St. Louis-San Francisco	June	— 886,357	— 16,379
	6 mos.	— 5,094,322	— 501,376
Ft. Worth & Rio Grande	June	— 24,806	— 13,825
	6 mos.	— 209,593	— 182,167
St. Louis, San Francisco & Texas	June	— 44,256	12,624
	6 mos.	— 357,950	— 293,691
St. Louis Southwestern Lines	June	— 289,449	212,086
	6 mos.	— 1,518,589	— 456,666
San Diego & Arizona	June	— 191,238	— 63,629
	6 mos.	— 541,065	— 483,972
Seaboard Air Line	June	— 979,308	— 657,965
	6 mos.	— 4,219,516	— 2,646,276
Southern Ry.	June	— 1,617,190	— 449,619
	6 mos.	— 6,893,622	— 2,770,396
Alabama Great Southern	June	— 61,741	33,875
	6 mos.	— 350,794	135,309
Cinn. New Orleans & Texas Pacific	June	— 44,843	105,135
	6 mos.	— 29,919	232,599
Georgia Southern & Florida	June	— 22,198	— 18,276
	6 mos.	— 114,573	— 37,617
New Orleans & Northeastern	June	— 78,403	— 62,221
	6 mos.	— 401,696	— 386,206
Northern Alabama	June	— 26,535	— 18,151
	6 mos.	— 116,678	— 93,054
Southern Pacific Transport'n System	June	852,828	3,411,962
	6 mos.	— 5,479,048	2,157,684
So. Pac. Steamship Lines	June	Included in Southern Pacific Transportation System	
	6 mos.		
Texas & New Orleans	June		
	6 mos.		
Spokane, Portland & Seattle	June	— 236,461	— 111,585
	6 mos.	— 1,668,461	— 1,221,571
Tennessee Central	June	— 15,302	— 6,533
	6 mos.	— 76,205	— 37,994
Term. R. R. Assn. of St. L.	June	— 123,276	— 49,866
	6 mos.	— 760,443	— 366,642
Texas & Pacific	June	16,996	320,418
	6 mos.	— 590,472	1,162,800
Texas Mexican	June	— 31,934	— 27,659
	6 mos.	— 59,659	— 65,481
Toledo, Peoria & Western	June	— 1,043	8,076
	6 mos.	— 4,586	43,675
Toledo Terminal	June	— 12,341	— 12,246
	6 mos.	— 28,543	57,679
Union R. R. of Penna.	June	— 129,896	93,851
	6 mos.	— 879,290	— 409,741
Union Pacific	June	— 5,192,381	5,159,821
	6 mos.	10,470,867	12,942,954
Oregon Short Line	June	— 192,547	191,082
	6 mos.	— 671,264	1,388,348
Oregon-Wash. R. R. & Nav. Co.	June	— 424,522	— 257,351
	6 mos.	— 2,755,706	— 2,413,773
Los Angeles & Salt Lake	June	— 66,984	106,182
	6 mos.	— 500,080	— 884,142
St. Joseph & Grand Island	June	— 9,640	— 24,760
	6 mos.	— 112,063	— 82,627
Utah	June	— 33,855	— 39,644
	6 mos.	— 56,172	— 72,295
Virginian	June	— 15,269	216,428
	6 mos.	— 820,822	1,290,296
Wabash	June	— 639,673	— 352,573
	6 mos.	— 4,020,322	— 1,789,164
Ann Arbor	June	— 69,452	— 58,536
	6 mos.	— 221,632	— 132,488
Western Maryland	June	— 78,738	— 52,142
	6 mos.	— 72,335	— 478,743
Western Pacific	June	— 364,203	— 204,499
	6 mos.	— 1,815,846	— 1,228,103
Wheeling & Lake Erie	June	— 61,980	— 49,895
	6 mos.	— 267,329	— 362,621
Wichita Falls & Southern	June	— 3,100	— 5,160
	6 mos.	— 60,375	— 88,839

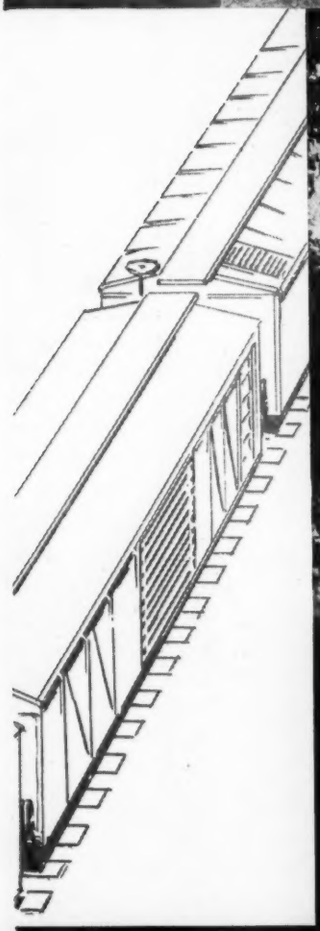
Continued on second left-hand page

WHEREVER RAILROADS ARE



You Will Find





LIMA LOCOMOTIVE WORKS,

MAKING LOW COST RECORDS

LIMA SUPER-POWER

Wherever Lima Super-Power goes into service you will find fuel costs dropping, train loads increasing, schedules speeding up and a distinct improvement in the operating ratio. « Investment in modern Super-Power is the surest way to lower operating costs. With light or heavy traffic modern locomotives are paying handsomely.

Incorporated, LIMA, OHIO

NEWS

(Continued from page 343)

is losing heavily in the operation of both freight and passenger business, the state law does not permit the commission to grant the relief sought.

Safety Congress at Washington, October 3-7

The twenty-first annual safety congress and exposition will be held in Washington, D. C., October 3 to 7, inclusive, with headquarters at Wardman Park Hotel, according to a recent announcement of the National Safety Council. There will also be registration and information desks at the Shoreham Hotel. As heretofore announced, the Safety Section of the American Railway Association is now merged with the Steam Railroad Section of the National Safety Council, and the Railroad Section meetings at this congress will constitute the annual meeting of the Safety Section, A. R. A. Of this section the chairman is C. T. Bailey, Oregon Short Line; first vice-chairman, C. E. Hill, New York Central; second vice-chairman, C. L. LaFountaine, Great Northern; secretary, J. C. Caviston, 30 Vesey Street, New York City.

The principal subjects for discussion as given in the program, with the names of speakers are given below:

TUESDAY MORNING, OCTOBER 4, HOTEL WASHINGTON

Relations With the National Safety Council, Robert Scott, (A.C.L.) Ch.
Ceremony, "Joining Hands"; G. H. Warfel, (U. P.) representing the National Safety Council and C. T. Bailey, (O. S. L.) representing the American Railway Association.
Chairman Bailey's Annual Address.
Cooperative Objectives; A. H. Young, Secretary Industrial Relations Counselors.
Train Accidents, G. H. Warfel.
Safety Today, T. H. Carrow, (P. R. R.).
Address, R. H. Aishton, president, American Railway Association.

TUESDAY AFTERNOON

Highway Crossing Accidents, H. A. Rowe, (D. L. & W.) Ch.
The Trespass Evil, H. L. Denton (B. & O.).
Contact With Bureau of Statistics I. C. C.; D. H. Beatty (Southern) Ch.
Uniformity in Reporting, Dr. M. O. Lorenz, (I. C. C.).
Safety—the Individual, D. F. Stevens, (B. & O.).
The Green Book, L. R. Palmer.

WEDNESDAY MORNING, OCTOBER 5, HOTEL WASHINGTON

Train Service Accidents, D. G. Phillips, (Wabash) Ch.
Switching Practices, P. F. Neff, (P. R. R.).
Address by Hon. W. N. Doak, Secretary of Labor.
Economic Values of Safety, O. H. Page, (A. C. L.).
Accident Investigation by I. C. C.; W. P. Borland.
Value of the Safe Practices Committees; F. Hartenstien (L. V.).
Work Trains, C. L. LaFountaine, (G. N.).

WEDNESDAY AFTERNOON

Non-Train accidents, D. A. Klumph, (P. M.) Ch.
Safety Morale in the Shops, G. H. Miller.
Stripping and Erecting Locomotives, J. W. Lemon, (M. P.).
Handling Material, E. R. Cott, (C. & O.).
The Worst Hazards in the Car Department; W. R. Dunbar, (D. & H.).
Committee on Education, L. G. Bentley, (C. & O.) Ch.
Safety and Publicity, Samuel O. Dunn, editor, *Railway Age*.

THURSDAY MORNING, OCTOBER 6, HOTEL WASHINGTON

Power Apparatus in M. W. Work; Lem Adams, (U. P.).
Planning for Safety in Track Construction; F. R. Bradford, (B. & M.)
The Bridge and Building Gang; J. P. Wood, (P. M.).
The Extra Gang Problem; H. A. Parish, (C. & N. W.).
A Safety Program for the Coming Year; C. E. Hill, (N. Y. C.).

Note: "Ch." indicates that speaker is chairman of a committee presenting a report.

Election of Officers

The election of officers is scheduled for Wednesday forenoon, and installation at the close of the meeting on Thursday forenoon.

Revision of Newsprint Rates Proposed

A general revision of freight rates on newsprint paper from producing and shipping points in official territory, Wisconsin, Michigan, Minnesota, and Canada (insofar as the transportation takes place in the United States) to destinations in official and southern territories, is recommended by Examiner John H. Howell of the Interstate Commerce Commission in a proposed report made public on August 29 on an investigation ordered by the commission in 1928. The revision proposed, which is intended to bring about a more equitable adjustment of rates, is based on class rate scales heretofore prescribed by the commission in the eastern and southern class rate investigations. The general basis proposed within official territory, including Illinois and west-bank Mississippi river crossings as far south as Cairo, Ill., is the sixth-class key rates or sixth-class distance rates under the basic scale, whichever are lower, prescribed in the eastern case. From North Atlantic ports to destinations in official territory, applicable on newsprint brought to the ports by water, Examiner Howell recommends the sixth-class import rates now in effect. To destinations in southern territory from origins in official and western trunk line territory, he recommends 25 per cent of the lowest first-class rates under the key-point adjustment, under a basic scale prescribed in the southern case, and within southern territory 27.5 per cent of the basic scale. He also recommends that carriers subject to the interstate commerce act should establish and apply reasonable and non-preferential and non-prejudicial rates from the international boundary points to destinations in the territories embraced within the investigation and certain investigation-and-suspension dockets.

After referring to the declines in prices of newsprint the examiner says "it is not made clear how a reduction in the level of newsprint rates would materially improve the condition of the producers. There is no contention that it would affect the market value of newsprint; in fact, the consumers, the newspapers, contend that they, directly or indirectly, pay the freight charges and that the measure of the rates affects the cost to them of their newsprint supplies. It would seem to follow that any possible benefit to producers from a general reduction in the rate level would come from stimulation of consumption. Several elements determine consumption, and in view of the present relatively low market value it seems doubtful that a reduction in rate level would stimulate it appreciably." He also says that the consumers profit by the present situation of keen competition to the extent that it has resulted in a lowering of newsprint prices and that they are interested mainly in the rate level while the main interest of the producers would appear to be in the relationship between producing sections. The greatest movement is and probably will be from Canada, he says, and the relations between rates applicable thereon and rates from domestic mills is probably the most vital point in the investigation. It would be advantageous to consider both at one time, but the record, made on the assumption that joint international rates would continue, is insufficient as a basis for determining reasonable and non-prejudicial rates from the boundary and it is necessary, under the circumstances, to determine a reasonable adjustment of domestic rates and leave the matter of the rates from the boundary for argument and for further investigation if that should prove necessary.

A little over a month ago a petition signed on behalf of the railroads generally was filed with the commission calling attention to the delay in the submission of a report on this investigation since the record was closed in November, 1929, and urging "a course of procedure calculated to eventualize, with as little further delay as practicable, in a decision in this investigation." At the same time the carriers asked the commission to consider changes in the economic situation that have taken place.

Meetings & Conventions

The following list gives names of secretaries, date of next or regular meetings and places of meetings.

AIR BRAKE ASSOCIATION.—T. L. Burton, Room 5605, Grand Central Terminal Building, New York City.

ALLIED RAILWAY SUPPLY ASSOCIATION.—F. W. Venton, Crane Company, 836 S. Michigan Ave., Chicago. To meet with Air Brake Association, Car Department Officers Association, International Railroad Master Blacksmiths' Association, International Railway Fuel Association, International Railway General Foremen's Association, Master Boiler Makers Association and the Traveling Engineers' Association.

AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—W. R. Curtis, F. T. R., M. & O. R. R., Chicago, Ill.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. L. Duncan, 332 S. Michigan Ave., Chicago.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York. Annual meeting, October 24-25, 1932, St. Louis, Mo.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—F. O. Whiteman, Room 800, 1017 Olive St., St. Louis, Mo.

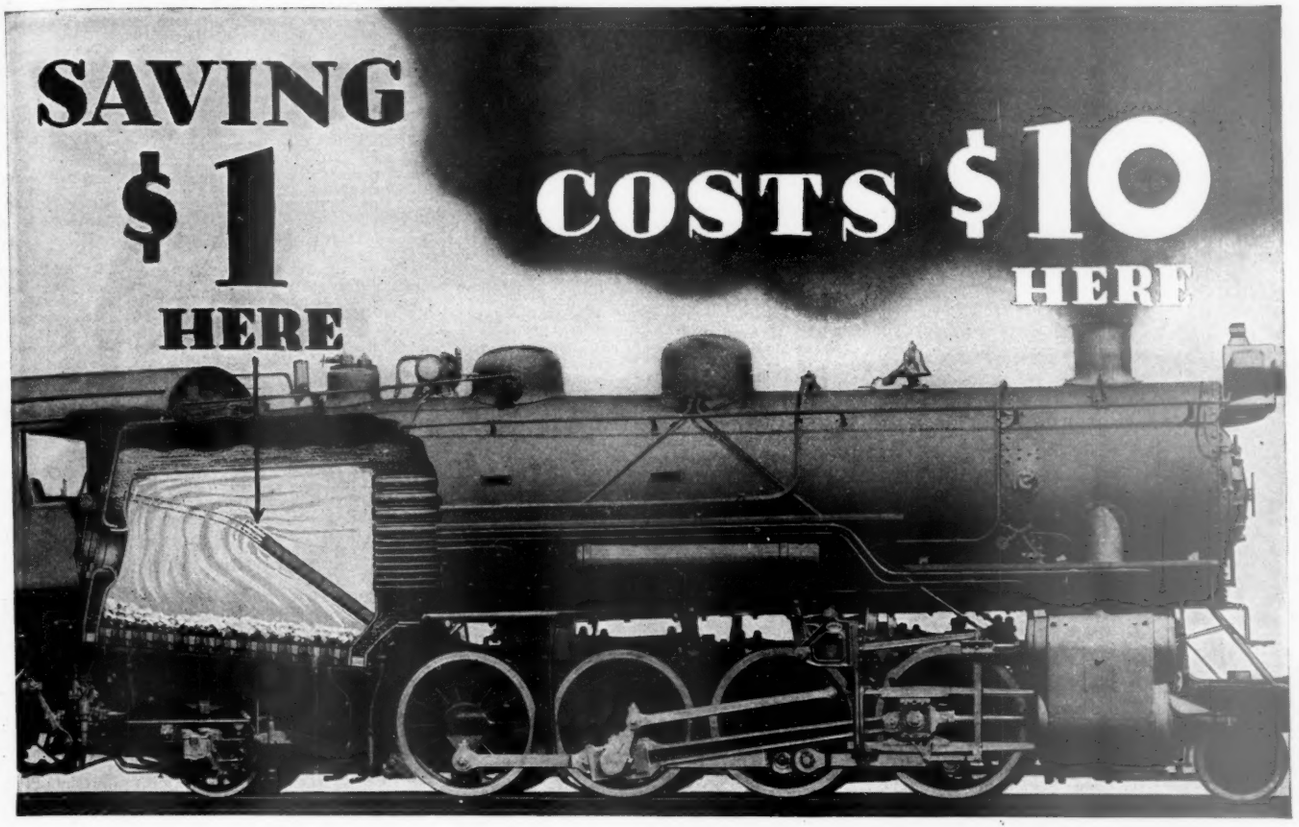
AMERICAN ASSOCIATION OF RAILWAY ADVERTISING AGENTS.—E. A. Abbott, Poole Bros., Inc., 85 West Harrison St., Chicago. Next meeting, Jan. 21, 1933.

AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.—F. R. Borger, C. I. & L. R. R., 836 Federal St., Chicago.

AMERICAN ELECTRIC RAILWAY ASSOCIATION.—Guy C. Hecker, 292 Madison Ave., New York. Annual Meeting, September 27-28, 1932, Hotel Stevens, Chicago, Ill.

AMERICAN RAILWAY ASSOCIATION.—H. J. Forster, 30 Vesey St., New York, N. Y.
Division I.—Operating.—J. C. Caviston, 30 Vesey St., New York.
Freight Station Section.—R. O. Wells, Freight Agent, Illinois Central Railroad, Chicago
Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York.
Protective Section—J. C. Caviston, 30

Continued on next left-hand page



• using a smaller arch means wasting fuel.....

THERE is no profit in pointing with pride to a saving of ten cents in Arch Brick expense when it is obtained at the sacrifice of a dollar in fuel.

Leaving off a course of the Arch may cut down on Arch Brick requisitions but it sends up fuel expense.

Careful tests by various railroads disclose that every dollar "saving" by cutting down the Arch results in a ten dollar loss in fuel.

Economy is essential but it should be true economy that results in the greatest net return to the treasury.

This calls for a 100% Arch on every locomotive.

THERE'S MORE TO SECURITY ARCHES THAN JUST BRICK

HARBISON-WALKER REFRACTORIES CO.
Refractory Specialists

AMERICAN ARCH CO.
INCORPORATED
Locomotive Combustion Specialists

Vesey St., New York.
Safety Section.—J. C. Caviston, 30 Vesey St., New York. Annual meeting October 4-6, 1932, Hotel Washington, Washington, D. C.
Telegraph and Telephone Section.—W. A. Fairbanks, 30 Vesey St., New York. Annual meeting, June 13-15, 1933, Hotel Stevens, Chicago, Ill.
Division II.—Transportation.—G. W. Covert, 59 East Van Buren St., Chicago.
Division III.—Traffic.—J. Gottschalk, 143 Liberty St., New York.
Division IV.—Engineering.—E. H. Fritch, 59 East Van Buren St., Chicago. Annual meeting, March 14-16, 1933, Palmer House, Chicago. Exhibit by National Railway Appliances Association.
Construction and Maintenance Section.—E. H. Fritch, 59 East Van Buren St., Chicago.
Electrical Section.—E. H. Fritch, 59 East Van Buren St., Chicago. Next meeting, October 27, 1932, Chicago.
Signal Section.—R. H. C. Balliet, 30 Vesey St., New York.
Division V.—Mechanical.—V. R. Hawthorne, 59 East Van Buren St., Chicago.
Equipment Painting Section.—V. R. Hawthorne, 59 East Van Buren St., Chicago.
Division VI.—Purchases and Stores.—W. J. Farrell, 30 Vesey St., New York.
Division VII.—Freight Claims.—Lewis Pilcher, 59 East Van Buren St., Chicago.
Division VIII.—Motor Transport.—George M. Campbell, 30 Vesey St., New York.
Car Service Division.—C. A. Buch, 17th and H. Sts., N. W., Washington, D. C.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W. Ry. 319 N. Waller Ave., Chicago.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—J. A. Senter, Ind. Agt., N. C. & St. L. Ry., Nashville, Tenn. Semi-annual meeting, December 1-2, 1932, Hotel Sherman, Chicago, Ill.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in co-operation with the American Railway Association,. Division IV.—E. H. Fritch, 59 East Van Buren St., Chicago. Annual meeting, March 14-16, 1933. Exhibit by National Railway Appliances Association.

AMERICAN RAILWAY MAGAZINE EDITORS ASSOCIATION.—Miss E. Kramer, M-K-T Employees Magazine, St. Louis, Mo.

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—G. G. Macina, C., M., St. P. & P. R. R., 11402 Calumet Ave., Chicago. Exhibit by Supply Association of the American Railway Tool Foremen's Association.—E. E. Caswell, Union Twist Drill Co., 11 S. Clinton St., Chicago.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—R. E. Schindler, Union Trust Bldg., Washington, D. C.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Calvin W. Rice, 29 W. 39th St., New York. Railroad Division, Marion B. Richardson, *Railway Age*, 30 Church St, .New York.

AMERICAN WOOD PRESERVERS' ASSOCIATION.—H. L. Dawson, 1104 Chandler Building, Washington, D. C. Annual meeting, January 24-26, 1932, Chicago, Ill.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—H. D. Morris, District Claim Agent, Northern Pacific Ry., St. Paul, Minn. Annual meeting, June 21, 1933, Chicago.

ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W., Room 411, C. & N. W. Station, Chicago. Exhibit by Railway Electrical Supply Manufacturers' Association.

ASSOCIATION OF RAILWAY EXECUTIVES.—Stanley J. Strong, Transportation Building, Washington, D. C.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—S. A. Baber, High Grade Manufacturing Co., 10418 St. Clair Ave., Cleveland, Ohio. Meets with American Railway Bridge and Building Association.

CANADIAN RAILWAY CLUB.—C. R. Crook, 2276 Wilson Ave., N. D. G., Montreal, Que. Regular meetings, second Monday of each month, except June, July, and August, Windsor Hotel, Montreal, Que.

CAR DEPARTMENT OFFICERS ASSOCIATION.—A. S. Sternberg, M. C. B. Belt Ry. of Chicago, 7926 South Morgan Street, Chicago.

CAR FOREMAN'S ASSOCIATION OF CHICAGO.—G. K. Oliver, 2514 W. 55th St., Chicago. Regular meetings, second Monday of each month, except June, July, and August, Auditorium Hotel, Chicago.

CAR FOREMEN'S ASSOCIATION OF LOS ANGELES.—J. W. Krause, Room 299, 610 So. Main St., Los Angeles, Cal. Regular meetings, second Monday of each month, except July, August and September, Room 299, 610 So. Main St., Los Angeles. Club not active at present time.

CAR FOREMEN'S ASSOCIATION OF ST. LOUIS, MO.—J. F. Brady, Maine and Barton Sts., St. Louis, Mo. Operation suspended indefinitely.

CENTRAL RAILWAY CLUB OF BUFFALO.—T. J. O'Donnell, 1817 Hotel Statler, McKinley Square, Buffalo, N. Y. Regular meetings, second Thursday of each month, except June, July and August, Hotel Statler, Buffalo, N. Y.

CINCINNATI RAILWAY CLUB.—D. R. Boyd, 2920 Utopia Place, Hyde Park, Cincinnati, Ohio. Regular meetings second Tuesday in February, May, September and November, Hotel Gibson, Cincinnati, O.

CLEVELAND RAILWAY CLUB.—F. L. Frericks, 14416 Alder Ave., Cleveland, Ohio. Regular meetings second Monday of each month, except June, July and August, Auditorium, Brotherhood of Railroad Trainmen's Building, West 9th St., and Superior Ave., Cleveland.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich.

INTERNATIONAL RAILWAY CONGRESS.—January 19-30, 1933, Cairo, Egypt.

INTERNATIONAL RAILWAY FUEL ASSOCIATION.—T. D. Smith, 1660 Old Colony Building, Chicago.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 1061 W. Wabasha St., Winona, Minn.

MASTER BOILER MAKERS ASSOCIATION.—A. F. Stiglmeier, 29 Parkwood St., Albany, N. Y.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—James B. Walker, 270 Madison Ave., New York. Annual meeting, November 15-18, 1932, Hot Springs, Ark.

NATIONAL ASSOCIATION OF RAILROAD TIE PRODUCERS.—Roy M. Edmonds, 1252 Syndicate Trust Bldg., St. Louis, Mo.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. W. Kelly, Suite 322, 910 South Michigan Ave., Chicago. Exhibit during A.R.E.A. Convention, March 13-16, 1933, Coliseum, Chicago.

NATIONAL SAFETY COUNCIL.—Steam Railroad Section; J. L. Walsh, (Honorary vice-chairman), Supt. Safety, M.-K.-T. R. R. Dallas, Tex. Annual meeting, October 4-6, 1932, Hotel Washington, Washington, D. C.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, second Tuesday of each month, except June, July, August and September, Hotel Statler, Boston, Mass.

NEW YORK RAILROAD CLUB.—D. W. Pye, 30 Church St., New York. Regular meetings third Friday of each month, except June, July and August, 29 W. 39th St., New York City.

PACIFIC RAILWAY CLUB.—W. S. Wollner, P. O. Box, 3275, San Francisco, Cal. Regular meetings second Thursday of each month, alternately in San Francisco and Oakland.

RAILWAY ACCOUNTING OFFICERS' ASSOCIATION.—E. R. Woodson, Transportation Building, Washington, D. C.

RAILWAY BUSINESS ASSOCIATION.—P. H. Middleton, (Treas. and Asst. Sec.), First National Bank Building, Chicago, Ill.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 1841 Oliver Building, Pittsburgh, Pa. Regular meetings, fourth Thursday of each month except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS ASSOCIATION.—Edward Wray, 9 S. Clinton St., Chicago. Meets with Association of Railway Electrical Engineers.

RAILWAY FIRE PROTECTION ASSOCIATION.—R. R. Hackett, Baltimore & Ohio R. R., Baltimore Md. Annual meeting October 18-19, 1932, Hotel Cleveland, Cleveland, Ohio.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1841 Oliver Bldg., Pittsburgh, Pa. Meets with Mechanical Division, Purchases and Stores Division and Motor Transport Division, American Railway Association.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York. Meets with Telegraph and Telephone Section of A. R. A. Division I.

RAILWAY TREASURY OFFICERS ASSOCIATION.—L. W. Cox, 1428 Broad Street Station Building, Philadelphia, Pa. Annual meeting, October 21, 1932, New York City.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—T. F. Donahoe, Gen. Supvr. Road, Baltimore & Ohio, Pittsburgh, Pa.

ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Drawer 24, M. P. O., St. Louis, Mo. Regular meetings, second Friday of each month, except June, July and August, Statler Hotel, St. Louis. Meetings temporarily suspended.

SIGNAL APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York. Meets with A. R. A. Signal Section.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, 4 Hunter St., S.E., Atlanta, Ga. Regular meetings, third Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—R. G. Parks, A. B. & C. R. R., Atlanta, Ga.

SUPPLY MEN'S ASSOCIATION.—E. H. Hancock, Treasurer, Louisville Varnish Co., Louisville, Ky. Meets with A. R. A. Division V. Equipment Painting Section.

TORONTO RAILWAY CLUB.—J. A. Murphy, P. O. Box 8, Terminal "A," Toronto. Regular meetings first Friday of each month, except June, July and August, Royal York Hotel, Toronto, Ont.

TRACK SUPPLY ASSOCIATION.—L. C. Ryan, Oxweld Railroad Service Co., Carbon & Carbide Building, Chicago. Meets with Roadmasters and Maintenance of Way Association.

TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, 1177 East 98th St., Cleveland, O.

WESTERN RAILWAY CLUB.—J. H. Nash, Dri-Steam Valve Sales Corp., 122 S. Michigan Ave., Chicago. Regular meetings third Monday of each month, except June, July, August and September, Hotel Sherman, Chicago.

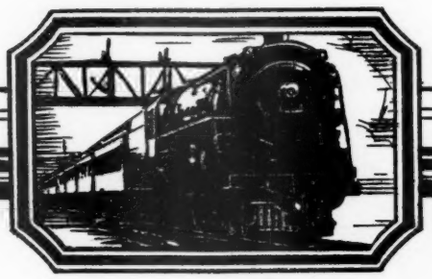
* * * *

Photo by Courtesy of the Indianapolis (Ind.) News

One Reason for Motor Truck Regulation

This is what happened when a 24-ton truck drove onto a bridge on State Road No. 35 south of Brownstown, Ind. The truck, which carried a load of butter and cheese collected from farmers in southern Indiana for a Pittsburgh, Pa., firm, managed to reach safety before the bridge collapsed.

Continued on next left-hand page



Alco Alco

TO ECONOMIZE— MODERNIZE

"IF the railroads are to maintain a sufficiently strong position in the transportation field to develop any appreciable increase in ton-mile volume, they cannot wait for the increase to furnish the incentive to improve their motive-power situation. The future of the railroad industry depends upon its ability to furnish better service at lower cost. Better freight service is coming increasingly to require higher train speeds. Lower cost requires greater train loads. Modern locomotives are meeting both these requirements. Locomotives twenty, or even ten years old cannot meet them."

RAILWAY AGE, July 30th, 1932.

American Locomotive Company
30 Church Street New York N.Y.

Alco Alco

Foreign

World's Fastest Train Again Accelerated

The Cheltenham Flyer of the Great Western of Great Britain—the world's fastest train—is to be faster still. On Monday, September 12, two minutes will be cut off the present 67-minute running time for the 77¼ miles between Swindon and Paddington (London) thus raising the average speed for the "start-to-stop" run from 69.18 to 71.3 m.p.h. This, the Great Western claims, is the first time "in the hundred years of the world's railway history that a train has been regularly scheduled at 70 m.p.h. or over."

On September 14, 1931, when the existing 67-minute schedule was introduced the initial run was covered in 59½ minutes and on June 6, in 56 min. 47 sec. (average 81.6 m.p.h.) thus "breaking every known record for a 'start-to-stop' run with steam as the motive power."

The new 65-minute schedule has been made possible by the all round acceleration of services which have been effected during the last 14 months and the cut of two minutes will be made by knocking half a minute off the existing running times allowed between Swindon and Steventon; Didcot and Reading; Reading and Slough and Southall and Paddington. There will be no change in the train's arrival time at Paddington—4:55 p. m., but it will start two minutes later from Swindon—at 3:50 instead of 3:48 p. m.

The initial run, as it comes within the school and general vacation season, is expected to attract even more attention than that of a year ago, when the train was cheered throughout its entire route.

Below are given the schedule passing times at the existing and proposed new timing:—

Station	Distance Point to Point Miles	Chains	Times—Old arr. p.m.	pass	dep. p.m.	New, effective Sept. 12—arr p.m.	pass	dep. p.m.
Swindon	..	..	....	....	3:48	....	....	3:50
Steventon	20	62	....	4:07	....	....	4:08½	....
Didcot	3	32	....	4:09½	....	....	4:11	....
Reading	17	12	....	4:23	....	....	4:24	....
Slough	17	42	....	4:36½	....	....	4:37	....
Southall	9	30	....	4:44	....	....	4:44½	....
Paddington	9	6	4:55	....	....	4:55	....	....
	77¼ miles in		67 min.			65 min.		
	"Start to stop" average		69.18 m.p.h.			71.3 m.p.h.		

Other main features of the Company's winter service are:

Quicker Trains.—A further saving of 460 minutes will be made daily in the journey time of trains. This is the fourth cut in 14 months to be introduced with successive issues of the time table viz:

July, 1931	2752 minutes saved daily
Sept., 1931	1329 minutes saved daily
July, 1932	6553 minutes saved daily
Sept., 1932	460 minutes saved daily

Mile-a-Minute Express.—All the principal accelerated expresses in the summer service are to be retained (apart from those run specially for the summer holiday traffic which will be withdrawn) and there will be 58 such expresses daily covering 4,558 miles at "start-to-stop" speeds of 55 to 71.3 m.p.h., twelve of these will be scheduled at speeds exceeding a mile-a-minute average.

Supply Trade

The C. K. Cairns Company, Cincinnati, Ohio, has been appointed representative in that district for the Rawlplug Company, Inc., New York.

Julius F. Stone, Sr., president of the **Columbus-McKinnon Chain Corporation** and the **Chisholm-Moore Hoist Corporation,** Tonawanda, N. Y., has also been elected president of the **Case Crane & Kilbourne Jacobs Company,** Columbus, Ohio.

John H. Thomas, assistant vice-president of the Celotex Company has resigned to become vice-president of the **American Flange & Manufacturing Company,** 350 Fifth avenue, New York. Mr. Thomas will have charge of the company's metal insulation department.

M. Schiller, in addition to his duties as vice-president of the **Superheater Company** of New York and Chicago, has been elected treasurer of that company, to succeed **W. F. Jetter,** recently resigned; **F. J. Dolan** has been elected assistant secretary and assistant treasurer of the company; **Thomas F. Morris** has been elected treasurer and assistant secretary of the **Superheater Company, Limited,** of Montreal, also to succeed Mr. Jetter.

OBITUARY

Fred G. Zimmerman, who resigned as vice-president, secretary and treasurer of the T-Z Railway Equipment Company, Chicago, in 1929, and who was formerly associated with the Charles R. Long, Jr. Company, the Okadee Company and the Viloco Railway Equipment Company, died in Louisville, Ky., on August 27.

George M. Gray, president of Peter Gray & Sons, Inc., Cambridge, Mass., died on August 10.

Horace W. Woodruff, Jr., vice-president of the Gulf States Creosoting Company, Hattiesburg, Miss., died on August 4.

Equipment and Supplies

FREIGHT CARS

THE WESTERN FRUIT EXPRESS is inquiring for 100 underframes.

THE PENNSYLVANIA on September 1 filed its formal application to the reconstruction finance corporation for a work loan of $2,000,000 for the construction of 1,500 box cars for the sole purpose of giving employment this fall and winter to men who would not be otherwise employed.

IRON & STEEL

THE TEXAS & PACIFIC is inquiring for 500 tons of structural steel for a bridge at Harvey, La.

MISCELLANEOUS

UNITED STATES NAVY DEPARTMENT—Bids will be received on September 20 by the paymaster general of the United States Navy, Washington, D. C., for the chassis, standard gage (railroad type) mobile yaw guy winch with self-propelled electric motor drive, for service at the Lakehurst, N. J., aeronautical station.

APPROXIMATELY 475 FURLOUGHED EMPLOYEES were recalled to work in the shops of the Delaware, Lackawanna & Western September 6. About 300 of these employees will be assigned to the Lackawanna's Keyser Valley car shops at Scranton, Pa., and approximately 175 to the locomotive and car shops at Kingsland, N. J.

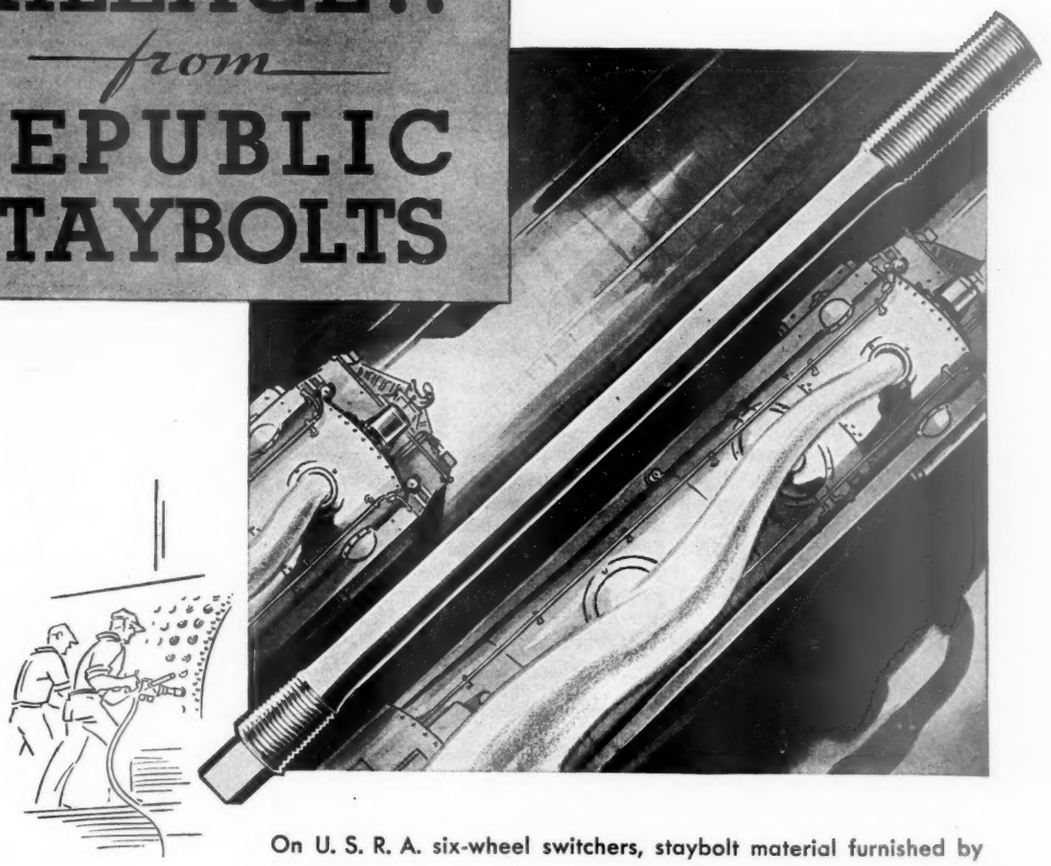
Construction

BALTIMORE & OHIO-ILLINOIS CENTRAL.—These roads contemplate the construction of a double-track through plate-girder underpass on steel bents at Nineteenth and Cook streets, Springfield, Ill. The underpass, which will have creosoted ballast-deck pile trestle approaches, has an estimated cost of $150,000.

PENNSYLVANIA.—Bids will be closed on September 7 for the construction of a one-story limestone suburban passenger station at Norwood, Ohio, a suburb of Cincinnati, at an estimated cost of about $30,000. This project is being undertaken in connection with the construction of additional trackage in this vicinity to give the Pennsylvania access to the Cincinnati Union Terminal over the tracks of the Baltimore & Ohio, the connection being made at Norwood.

Continued on next left-hand page

GREATER MILEAGE.. *from* REPUBLIC STAYBOLTS



On U. S. R. A. six-wheel switchers, staybolt material furnished by Republic gave three times the life of competitive material. « Modern metallurgy has given the railroad many improved materials—materials that reduce repair costs and prolong service life. « Staybolts of Toncan Iron and Agathon Nickel Iron provide greater resistance to corrosion and greater strength and toughness to meet increasingly severe operating conditions. « Climax alloy steel staybolts have greater strength without sacrifice of fatigue resistance. « Whatever your staybolt requirements, Republic has a material to meet them.

Toncan Iron Boiler Tubes, Pipe, Plates, Culverts, Rivets, Staybolts, Tender Plates and Firebox Sheets • Sheets and Strip for special railroad purposes • Agathon Alloy Steels for Locomotive Parts • Agathon Engine Bolt Steel • Nitralloy • Agathon Iron for pins and bushings • Agathon Staybolt Iron • Climax Steel Staybolts • Upson Bolts and Nuts • Track Material, Maney Guard Rail Assemblies • Enduro Stainless Steel for dining car equipment, for refrigeration cars and for firebox sheets • Agathon Nickel Forging Steel (20-27 Carbon) . . .

TONCAN COPPER Molybdenum IRON

AGATHON NICKEL IRON

The Birdsboro Steel Foundry & Machine Company of Birdsboro, Penna., has manufactured and is prepared to supply under license, Toncan Copper Molybdenum Iron castings for locomotives.

CENTRAL ALLOY DIVISION

REPUBLIC STEEL CORPORATION

MASSILLON OHIO

Financial

BALTIMORE & OHIO.—*Bonds.*—The Interstate Commerce Commission on August 31 authorized the authentication and delivery of $31,625,000 of refunding and general mortgage bonds, Series E, and the issuance of a like amount of Series F. bonds, all to be used in retiring $63,250,000 of 20-year 4½ per cent convertible bonds maturing March 1. The Series E bonds are to be used as part collateral for a loan of $31,625,000 from the Reconstruction Finance Corporation which it is proposed to use to pay one-half of the maturing bonds in cash.

BURLINGTON-ROCK ISLAND.—*Abandonment.*—The Interstate Commerce Commission has authorized this company to abandon a portion of its line, from Hillsboro to Cleburne, 29.9 miles.

LAKELAND.—*R. F. C. Loan.*—This company has applied to the Interstate Commerce Commission and the Reconstruction Finance Corporation for a loan of $12,000.

LOUISVILLE & NASHVILLE.—*Abandonment.*—The Interstate Commerce Commission has authorized this company to abandon a line extending from Cliffside, Ky., southeasterly to Irvine, 77 miles.

LOUISVILLE & NASHVILLE.—*Final Valuation.*—The Interstate Commerce Commission has issued its final valuation report as of June 30, 1917, finding the final value for rate-making purposes of the property owned and used for common-carrier purposes to be $300,275,000, while the value of the property owned but not used was placed at $7,827,269 and that of the property used but not owned was placed at $25,004,103. The investment in road and equipment as shown in the books was $281,620,323, which would be reduced to $262,175,766, the report said, if readjustments be made in conformity with the accounting classification.

MARYLAND & DELAWARE SEACOAST.—*Acquisition and Operation.*—The Interstate Commerce Commission has authorized this company to acquire and operate the line formerly owned by the Maryland & Delaware Coast, extending from West Denton, Md., to Lewes, Del.

NEW YORK, CHICAGO & ST. LOUIS.—*R. F. C. Loan.*—A further loan of $1,400,000 from the Reconstruction Finance Corporation was approved on August 27 by Division 4 of the Interstate Commerce Commission, consisting on this occasion of Commissioners Aitchison, Porter and Mahaffie, to pay fixed charges due August 29. The company had originally applied for a loan of $33,000,000 and the commission has heretofore approved loans of $9,300,000 and $700,000. On August 18 the company filed a supplemental application for $23,800,000 of which $23,000,000 was included in the original application, of which $20,000,000 was to pay that amount of 6 per cent gold notes maturing October 1. On July 27 the Railroad Credit Corporation loaned to the company $2,600,000, paying it directly to the Reconstruction Finance Corporation and thereby reducing the company's indebtedness to the government. According to the report the company desires to pay the three-year notes maturing in October in full and in cash but in the event that funds to do so cannot be advanced it has suggested the alternative plan of payment of half in cash and the extension of the remainder for a five-year period. In view of the urgency of the need for funds to pay September 1 interest the commission approved that part of the application, reserving the additional loans requested for latter consideration.

SOUTHERN.—*R. F. C. Loan.*—A further loan of $7,251,000 from the Reconstruction Finance Corporation was approved by Division 4 of the Interstate Commerce Commission on August 26 to provide in part for fixed charges maturing from September 1 to January 1 which amount to $9,938,326. The company had applied for a loan of $9,251,000 but later applied to the Railroad Credit Corporation for $2,000,000 of the amount. On February 26 the commission had approved a loan of $7,500,000 to meet over-due vouchers and fixed charges due on or before April 1 and the funds were received on March 1 and have been expended. As collateral for the additional loan the commission required the pledge of $24,019,000 of development and general mortgage bonds, which had been offered by the company, and in addition 4,584 shares of stock of the Fruit Growers' Express and $323,500 par value of stock of the Southwestern Construction Company.

ST. LOUIS-SAN FRANCISCO.—*Receivership Suit.*—A suit seeking the appointment of a receiver for the St. Louis-San Francisco, was filed in the federal court at St. Louis, Mo., on August 25, by Charles and Dora B. Gans, owners of $3,500 of 4 per cent series A prior lien mortgage bonds. They charge that the railroad is insolvent through inability to meet current and shortly maturing obligations and that its plan of financial readjustment is unfair to holders of prior lien bonds. The claim also sets forth that at the end of the last year the road's current liabilities exceeded its current assets by about $4,224,000 and cites borrowing by the road from the Reconstruction Finance Corporation and the Railroad Credit Corporation. The petition charges that the directors declared and paid dividends not earned in 1930 and 1931, decreasing assets that should have been conserved for the bondholders. In addition, it is charged that holders of the subsidiary, Kansas City, Fort Scott & Memphis bonds are asked to waive neither interest nor principal, but merely to extend the maturity of their bonds and to receive one-third of a share of Frisco preferred stock and one-half share of common stock for each $1,000 in bonds.

In commenting upon the application, E. M. Brown, chairman of the board, stated, "The action will be vigorously opposed. Counsel for the company states that there is no basis on which a bondholder can secure appointment of a receiver at the present time, and that they have no doubt that the application will be dismissed. There is no default existing under the prior lien mortgage or any other mortgage. No interest is due on the bonds until January 1. If adequate deposits are received under the re-adjustment plan prior to September 1, which the company believes will be the case, the company expects to be able to pay interest on the consolidated bonds due on that day and to be able thereafter to carry out the re-adjustment plan."

On August 29, the company filed a motion asking for the dismissal of the petition on the ground "that it shows on its face there is no default under the prior lien mortgage and states no facts entitling the bondholders to secure the appointment of a receiver."

ST. LOUIS SOUTHWESTERN.—*R. C. F. Loan.*—The Interstate Commerce Commission, Division 4, on August 26 approved an additional loan of $684,450 to this company from the Reconstruction Finance Corporation for the payment of vouchers, principal of equipment trust notes, and interest on equipment trust notes due September 1 and October 1.

UVALDE & NORTHERN.—*R. F. C. Loan Denied.*—Division 4 of the Interstate Commerce Commission has denied this company's application for a loan of $50,000 from the Reconstruction Finance Corporation for the purpose of repairing its line damaged by a recent heavy rainfall. The commission had previously denied an application for a loan of $300,000. The report said that the results of operation since 1921 show that it has not been possible for the applicant to develop a sufficient volume of traffic to pay a return on the investment.

Dividends Declared

Columbus & Xenia.—$1.10, payable September 10 to holders of record August 25.

Erie & Pittsburgh.—87½c, payable September 10 to holders of record August 31.

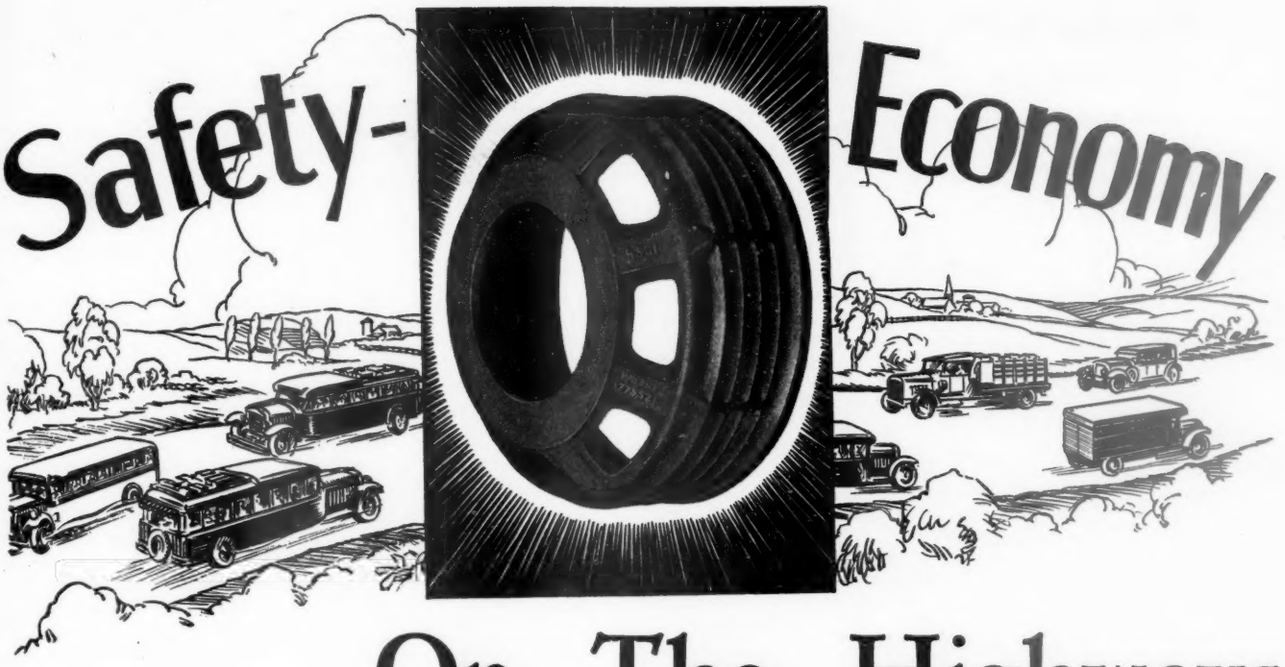
St. Joseph, South Bend & Southern.—75c, semi-annually; Preferred $2.50, semi-annually, both payable September 15 to holders of record September 10.

	Aug. 30	Last week	Last year
Average price of 20 representative railway stocks..	30.73	29.93	60.26
Average price of 20 representative railway bonds..	67.69	71.27	87.16

* * *

On the Wabash Near Dalton, Mo.

Continued on next left-hand page



On The Highways

WHERE opportunity for disaster occurs with vastly greater frequency than on any railroad—good brakes are even more important than they are under rolling stock.

Brake drums made of HUNT-SPILLER *Air Furnace* GUN IRON on your motor coaches and trucks provide assurance that brakes will hold in emergencies. With proper brake adjustments they retain that smooth braking surface which insures maximum braking efficiency and positive control.

The smooth, uniform wear resisting qualities of HUNT-SPILLER *Air Furnace* GUN IRON insure greater mileage from the brake lining as well as from the brake drums. The savings in brake maintenance costs pay a big return on the investment.

HUNT-SPILLER MFG. CORPORATION
J. G. Platt, Pres. & Gen. Mgr. V. W. Ellet, Vice-President.

Office & Works
383 Dorchester Ave. South Boston, 27, Mass.
Canadian Representative: Joseph Robb & Co., Ltd., 997 Aqueduct St., Montreal, P. Q.
Export Agent for Latin America:
International Rwy. Supply Co., 30 Church Street, New York, N. Y.

HSGI
Reg. U. S. Trade Mark

Brake Drums
Cyl. Replacement Sleeves
Clutch Plates
Pistons

HUNT-SPILLER GUN IRON
Air Furnace

Railway Officers

FINANCIAL, LEGAL AND ACCOUNTING

Malcolm R. Connell, auditor of disbursements of the New York Central, with headquarters at New York, has retired under the pension rules of the company and the position he held has been abolished.

OPERATING

José A. Jaime, chief clerk to the superintendent of car service of the National Railways of Mexico, has been promoted to superintendent of car service, with headquarters as before at Mexico, D. F., succeeding **Nicolás Procel,** who has been elected vice-president and general manager.

C. A. Clements, assistant general manager in charge of yard operations of the Missouri Pacific, with headquarters at St. Louis, Mo., has also assumed the duties of **E. C. Wills,** assistant general manager in charge of labor matters, who has retired, as noted in the *Railway Age* for August 6.

TRAFFIC

W. D. Dimmitt, assistant foreign freight agent for the Norfolk & Western, with headquarters at Norfolk, Va., has been appointed foreign freight agent, with headquarters at the same point and also at New York, succeeding **J. W. King,** who has retired. The position of assistant foreign freight agent at Norfolk has been discontinued.

J. P. Cummins, general passenger agent on the Union Pacific, with headquarters at Omaha, Neb., has been transferred to Portland, Ore., to succeed **W. K. Cundiff,** who has been appointed general passenger agent with headquarters at Denver, Colo., replacing **K. N. Middlekauff. J. O. Goodsell,** assistant general passenger agent at Omaha, has been appointed general agent, passenger department, at the same point, succeeding **A. G. Bloom.**

A. Blauel, assistant general freight agent on the Erie, has been promoted to general freight agent in charge of rates and divisions, with headquarters as before at Chicago, succeeding **L. H. Geller,** deceased. **E. C. Hallberg,** chief of the tariff bureau, has been advanced to assistant general freight agent at Chicago, to succeed Mr. Blauel. **H. T. Sweeney,** chief of the division bureau, replaces Mr. Hallberg as chief of the tariff bureau at Chicago.

W. D. Burch, general freight agent of the Louisiana & Arkansas and the Louisiana, Arkansas & Texas, with headquarters at Shreveport, La., has been appointed to the newly-created position of general northwestern agent for these lines, with headquarters at Kansas City, Mo., and the position of general freight agent has been abolished. **P. C. Lang,** general agent at Kansas City, has been transferred to Fort Worth, Tex., where the position of general agent is newly-created. **H. J. McCarthy,** until recently connected with the automobile business, has been appointed general agent at Detroit, Mich., where he succeeds **Arthur G. Garrett,** deceased.

Eleven positions in the traffic department of the Canadian National have been abolished effective September 1.

Re-organization of the staff includes the following changes: **John Pullen,** hitherto assistant to the traffic vice-president, is appointed regional general freight agent, Montreal; **R. E. Perry,** hitherto assistant freight traffic manager, Toronto, is appointed general freight agent, Toronto; **J. M. Sparling,** hitherto general freight agent, Portland, Me., is appointed division freight agent, Portland, Me.; **P. Mooney,** hitherto assistant general freight agent, Quebec, is appointed division freight agent, Quebec; **J. M. Horn,** hitherto assistant freight traffic manager, Winnipeg, is appointed general freight agent, Winnipeg, with **W. Hately** as assistant general freight agent and **F. G. Adams** as chief of tariff bureau; **C. A. Skog,** hitherto general freight agent at Detroit, becomes assistant general freight agent, Detroit, and **D. M. Crawford** is appointed division freight agent at the same point. With the abolition of the positions of general freight agent at Pittsburgh and general agent, Buffalo, **J. V. Maloney** is appointed assistant general freight agent at Buffalo, and **W. J. Hickey** succeeds Mr. Maloney as general agent at Pittsburgh, **W. P. Fitzsimons,** general freight agent at Buffalo, and **L. C. Dever,** general agent, freight department, New York, retired on August 1. **A. B. Chown,** hitherto passenger traffic manager, Chicago, is appointed general passenger agent, Chicago, and **W. R. Eastman,** formerly general passenger agent, assistant general passenger agent, **J. R. Melville,** hitherto assistant manager, passenger service bureau, Montreal, is retired after more than 43 years' service.

ENGINEERING AND SIGNALING

Salvador Madrazo Arcocha has been appointed chief engineer of the National Railways of Mexico, with headquarters at Mexico, D. F., succeeding **Heron Cabrera.**

Duncan R. Campbell, general superintendent of construction of the Western region of the Canadian National, with headquarters at Winnipeg, Man., retired on July 31, after 36 years of service with this road.

J. A. Heaman, chief engineer of the Grand Trunk Western (a subsidiary of the Canadian National), has been appointed office engineer on the headquarters staff of the Canadian National, with headquarters at Montreal, Que. As noted in the *Railway Age* for August 6, **P. D. Fitzpatrick** has been appointed chief engineer of the Grand Trunk Western to succeed Mr. Heaman.

MECHANICAL

H. S. Keppelman, who has been appointed superintendent of the car department of the Reading, with headquarters at Reading, Pa., as reported in the *Railway Age* of August 20, was born at Reading on March 11, 1890. He was educated in the Reading (Pa.) public schools, and entered railroad service in June, 1906, as messenger for the Reading. The following year he became machinist apprentice and in April, 1911, he was promoted to machinist. In July of the same year he was appointed draftsman, serving in that position until May, 1916, when he became general car inspector, the position he held at the time of his recent appointment as superintendent of the car department.

Irwin A. Seiders, superintendent of motive power and rolling equipment, Reading Company, who was granted a leave of absence on August 15, was born

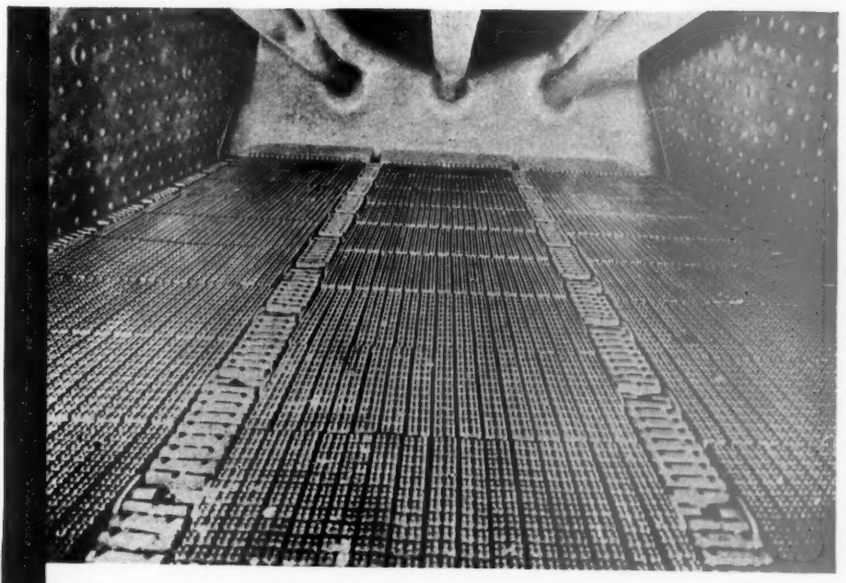
Irwin A. Seiders

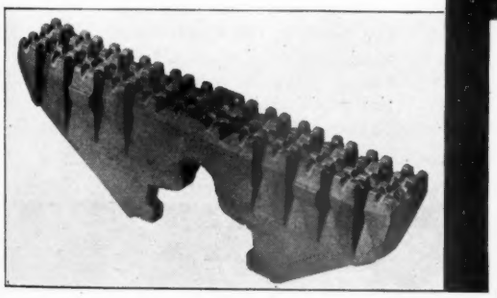
on October 23, 1864. He was educated at the Tamaqua (Pa.) High school and entered railway service in January, 1882, as laborer for the Reading. From 1883 to 1907, Mr. Seiders served with that road successively as depot hand, brakeman, fireman, engineman, extra passenger engineman and as regular passenger engineman at Tamaqua, Pa. On the latter date he was promoted to the position of road foreman of engines at Reading, Pa., and in 1914 he became fuel inspector. In October of the following year Mr. Seiders was appointed superintendent of motive power and rolling equipment, with headquarters at Reading, serving in that capacity until August 15.

Charles A. Gill, who has been appointed superintendent motive power

Continued on next left-hand page

Establishing NEW RECORDS *with* FIREBARS





FIREBAR equipped locomotives are establishing new records for low fuel consumption and maintenance costs. The illustration above shows one of 640 FIREBARS installed and operated over two years on a prominent class I railroad.

Accurate records have been kept of fuel and maintenance on these locomotives, showing large savings. Smoke has been practically eliminated. Records of similar economy are repeated wherever FIREBARS are used.

WAUGH FIREBAR

BETTER FIRES

FIREBAR DIVISION OF

WAUGH EQUIPMENT COMPANY

NEW YORK CHICAGO CLEVELAND ST. LOUIS

Research Laboratory and General Office—DEPEW, N. Y.

CANADIAN WAUGH EQUIPMENT CO., LTD. MONTREAL, QUE.

and rolling equipment of the Reading Company, has been employed in railroad motive power department work for 36 years, originally entering the service of that department of the Baltimore & Ohio as a call boy in 1896. Later he became a machinist in the Mount Clare shops (Baltimore, Md.) of the same company, and in the years following acquired a varied experience as mechanic, general foreman, master mechanic and general master mechanic. On February 1, 1917, he was appointed superintendent of motive power of the Eastern lines of the Baltimore & Ohio, remaining in that

C. A. Gill

position until February 10, 1931, when he accepted from the Soviet government a one-year appointment as chief consulting engineer of the railway systems of the Union of Socialistic Soviet Republics. In that capacity he aided in the development of motive power and other equipment problems of the Soviet system, and also advised in the expenditure of the 1931 Russian railroad budget, amounting to $1,700,000,000 and covering some 60,000 miles of line. Mr. Gill's first position upon his return from Russia early in 1932 was assistant to chief motive power and equipment of the Baltimore & Ohio, but about one month ago he became special representative of the Reading, which position he was holding at the time of his recent appointment as superintendent of motive power and rolling equipment.

M. Brophy, road foreman of engines of the Delaware, Lackawanna & Western at Hoboken, N. J., has retired from active duty after 49 years of service with that road.

OBITUARY

Arthur J. Lehmann, until recently traffic manager of the St. Louis Southwestern at St. Louis, Mo., died on August 26.

Cornelius F. Mooney, general traveling passenger agent of the New York Central, died of a paralytic stroke at the Milford, Conn., hospital on August 30. Mr. Mooney had been with the New York Central for 45 years and until July 1 last had served as general passenger agent of the system.

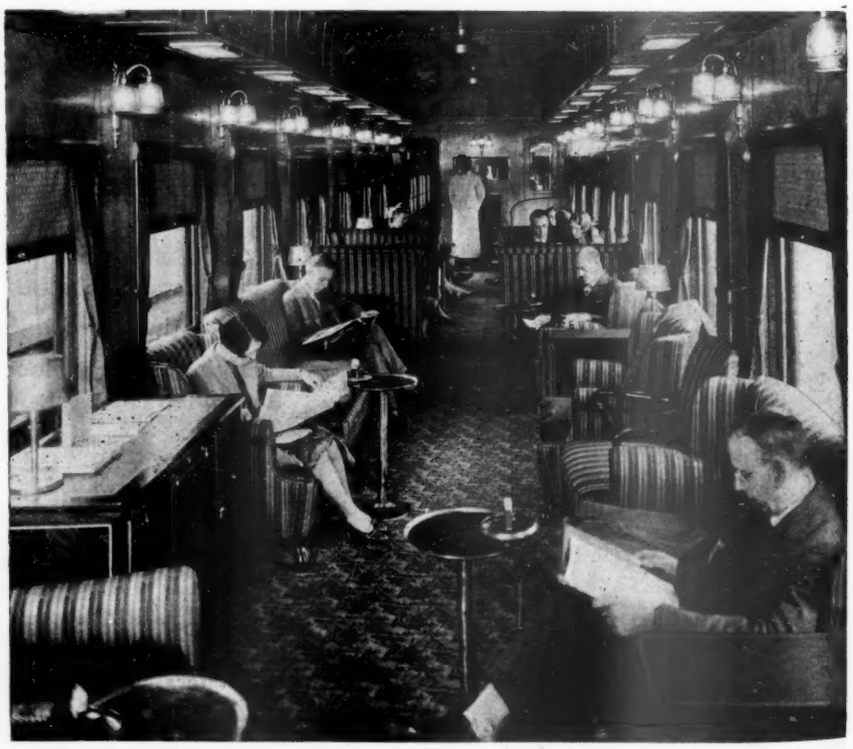
Hiram R. McCullough, retired vice-president in charge of traffic of the Chicago & North Western, who died at Chicago on August 21, was born on October 7, 1850, at Elkton, Md., and was educated at Washington and Lee University. He first entered railway service in 1873, when he became connected with the freight department of the Illinois Central. Seven years later he left this road to go with the Chicago & North Western as division freight agent, with headquarters at Winona, Minn., and from 1883 to 1885 he held a similar position at Chicago. In the latter year Mr. McCullough was promoted to assistant general freight agent at the same point, being further advanced to general freight agent in 1887. After nine years in this position he was made general traffic manager and in 1898 he was elected vice-president in charge of traffic. Mr. McCullough retained this position continuously until his retirement on January 1, 1921.

Robert J. Menzies, traffic manager of the New York Central, lines Buffalo and East, with jurisdiction over freight traffic, died at his home in Brooklyn, N. Y., on August 27, after a long illness. Mr. Menzies was born at Detroit, Mich., on June 17, 1868. He entered railway service in 1882, as messenger and clerk for the Merchants Despatch Transportation Company at Detroit. He became clerk in the office of the superintendent of the Lake Shore & Michigan Southern (now New York Central) in 1887, returning to the service of the Merchants Despatch Transportation Company a few months later. From 1892 to 1909, Mr. Menzies served successively as assistant agent, traveling agent, assistant state agent, state agent for New York, and general eastern agent for that company. He was appointed general eastern agent of the New York Central in 1909. In 1918 Mr. Menzies left railroad service to become manager of traffic and foreign sales manager

Robert J. Menzies

for the International Nickel Company. He returned to the service of the New York Central as assistant traffic manager in 1925, being further advanced to the position of traffic manager of that road, with jurisdiction over freight traffic, lines Buffalo and East, in 1930, the position he held at the time of his death.

* * * *



Lounge Car on the Canadian National